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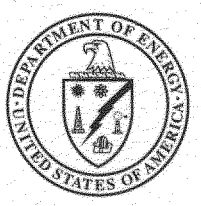
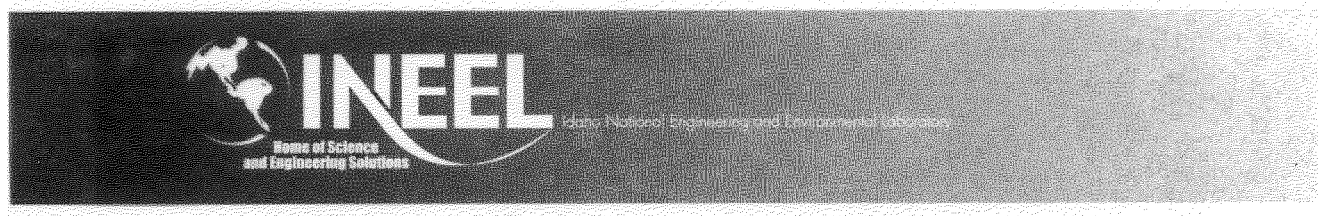
Revision 1
May 2003

Project No. 23095



U.S. Department of Energy
Idaho Operations Office

Comprehensive Remedial Design/ Remedial Action Work Plan for the Test Area North, Operable Unit 1-10, Group 1 Sites



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Prepared for the
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Comprehensive Remedial Design/ Remedial Action Work Plan for the Test Area North, Operable Unit 1-10, Group 1 Sites

DOE/ID-10712
Revision 1
Project No. 23095
May 2003

Approved by

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ABSTRACT

This comprehensive remedial design/remedial action work plan for the Waste Area Group 1, Operable Unit 1-10, Group 1 sites was developed to implement the selected alternatives, as stated in the Final Record of Decision for the Test Area North, Operable Unit 1-10. In the final Record of Decision, eight sites were identified for remedial action because contamination is present with calculated risks greater than 1E-04 and/or hazard indices greater than 1.0 for one or more exposure scenarios. These eight sites present an unacceptable risk to human health and the environment. This work plan describes in detail the remedial design and remedial action strategies for four of those eight sites: the Soil Contamination Area South of the Turntable (TSF-06, Area B), the Disposal Pond (TSF-07), the soil excavation at the PM-2A Tanks (TSF-26), and the Fuel Leak site (WRRTF-13). The remaining sites and the tank removal at the PM-2A Tanks will be addressed in the Comprehensive Remedial Design/Remedial Action Work Plan for the Test Area North, Operable Unit 1-10, Group 2 and 3 sites. The four sites addressed in this work plan are designated Group l; the remaining sites and the tank removal at the PM-2A Tanks are designated Group 2 and 3 sites.

This Group 1 work plan describes the remedial design/remedial action for the excavation and disposal of contaminated soils at the Soil Contamination Area South of the Turntable (TSF-06, Area B) and at the PM-2A Tanks (TSF-26). It also describes the installation of site controls at the Disposal Pond (TSF-07), and the results of post-Record of Decision sampling at the Fuel Leak site (WRRTF-13) that confirm excavation is not required. In addition to this work plan, the following documents are needed to implement these remedial actions: the health and safety plan, the operations and maintenance plan, the waste management plan, the institutional controls plan, and the sampling and analysis plan.

CONTENTS

FIGURES

TABLES

ACRONYMS

AOC	area of contamination
ARAB	applicable or relevant and appropriate requirement
bgs	below ground surface
bls	below land surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CLP	Contract Laboratory Program
COC	contaminant of concern
D&D	decontamination and dismantlement
DOE	U.S. Department of Energy
DOE-ID	U.S. Department of Energy Idaho Operations Office
EPA	U.S. Environmental Protection Agency
FFA/CO	Federal Facility Agreement and Consent Order
FRG	final remediation goal
FY	fiscal year
HASP	health and safety plan
HI	hazard index
HWD	hazardous waste determination
ICDF	INEEL CERCLA Disposal Facility
IDAPA	Idaho Administrative Procedures Act
IDEQ	Idaho Department of Environmental Quality
INEEL	Idaho National Engineering and Environmental Laboratory
M&O	management and operation
MCP	management control procedure
NLCI	no-longer-contained-in

NESHAP	National Emission Standards for Hazardous Air Pollutants
O&M	operations and maintenance
OU	operable unit
PCB	polychlorinated biphenyl
RAO	remedial action objective
RBCA	risk-based corrective action
RCRA	Resource Conservation and Recovery Act
RCT	radiological control technician
RD/RA	remedial design/remedial action
RD/RAWP	Remedial Design/Remedial Action Work Plan
RFP	request for proposal
RI/FS	remedial investigation/feasibility study
ROD	Record of Decision
RPSSA	Radioactive Parts Security Storage Area
RWMC	Radioactive Waste Management Complex
SVOC	semivolatile organic compound
TAN	Test Area North
TSF	Technical Storage Facility
VOC	volatile organic compound
WAG	waste area group
WDDF	INEEL Waste Determination and Disposition Form
WRRTF	Water Reactor Research Test Facility

Comprehensive Remedial Design/Remedial Action Work Plan for the Test Area North, Operable Unit 1-10, Group 1 Sites

1. INTRODUCTION

In accordance with the Federal Facility Agreement and Consent Order (FFA/CO)(U.S. Department of Energy Idaho Operations Office [DOE-ID] 1991) between the U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA), and the Idaho Department of Environmental Quality (IDEQ), hereafter referred to as the Agencies, the DOE submits the following remedial design/remedial action (RD/RA) work plan for select locations at Test Area North (TAN). Under the current remediation management strategy outlined in the FFA/CO, the location identified for the remedial action is designated as Waste Area Group (WAG) l, Operable Unit (OU) 1-10 at the Idaho National Engineering and Environmental Laboratory (INEEL).

The OU 1-10 remedial action, as part of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 USC § 9601 et seq.) process, will proceed in accordance with the signed Final Record of Decision (ROD) for TAN OU 1-10 (DOE-ID 1999). This ROD presents the selected remedies for 62 sites evaluated under the OU 1-10 remedial investigation/feasibility study (RI/FS) (DOE-ID 1997a) and evaluates institutional controls for all 94 identified release sites at WAG 1, including the OU 1-07B ROD (DOE-ID 2001a) "No Action" sites, where an unacceptable risk for unrestricted land use remains. Of these 94 sites, the ROD provides information to support remedial actions for eight sites where contamination presents an unacceptable risk to human health and the environment. Seven sites, plus three additional subareas of one remedial action site (Technical Support Facility [TSF]-06), were identified as "No Further Action" sites in the ROD and will require institutional controls. The WAG 1 institutional control plan (DOE-ID 2000a) will establish the requirements for the institutional control sites. Of the remaining sites, the Mercury Spill Area (TSF-08) was selected for a treatability study under WAG 10 and will be remediated as necessary under WAG 1 in the future; the TSF Injection Well (TSF-05) and Surrounding Groundwater Contamination (TSF-23) are being remediated under OU 1-07B. The Agencies concur that "No Action" will be taken at the remaining 76 sites; these sites allow unrestricted land use and will not require institutional controls nor five-year reviews.

The purpose of the RI/FS was to assess the investigations previously conducted for WAG 1, thoroughly investigate the sites not previously evaluated, and determine the overall risk posed by the WAG. The selected remedies, as identified in the ROD, are specific to each site. Of the eight sites requiring remedial action under the OU 1-10 ROD, four are addressed in this Comprehensive Remedial Design/Remedial Action Work Plan for the Test Area North, Operable Unit 1-10, Group 1 Sites. These sites and the planned remedial action start dates as outlined in the OU 1-10 RD/RA Scope of Work are in Table 1-1 (DOE-ID 2000b).

However, as identified in Section 1.3.1.4 of this RD/RAWP, remedial action at Water Reactor Research Test Facility (WRRTF)-13 will not be required. These schedules in no way preclude starting the remedial action at these sites earlier than planned, nor provide an enforceable schedule to start the remedial action.

Table 1-1. OU 1-10 Group 1 sites and planned remedial action start dates.

Site	Start Date
Soil Contamination Area South of the Turntable (TSF-06, Area B)	May 22, 2001
Disposal Pond (TSF-07)	November 14, 2000
PM-2A Tanks (TSF-26) Soil Excavation	May 22, 2001
Fuel Leak site WRRTF-13	April 2, 2001

The remaining sites, in addition to the PM-2A Tank content removal, will be addressed in the Comprehensive Remedial Design/Remedial Action Work Plan for the Test Area North, Operable Unit 1-10, Group 2 and 3 Sites. The Group 2 and 3 sites addressed, and the planned remedial action start dates as outlined in the OU 1-10 RD/RA Scope of Work, are presented in Table 1-2.

For the OU 1-10 Group 2 and 3 sites, the schedules may be modified further in the Group 2 and 3 sites RD/RAWPs.

Table 1-2. OU 1-10 Group 2 and 3 sites and planned remedial action start dates.

Site	Start Date
Intermediate-Level (Radioactive) Waste Disposal System (TSF-09)	October 15, 2002
Contaminated Tank Southeast of Tank V-3 (TSF-18)	October 15, 2002
PM-2A Tanks (TSF-26) tank content removal	August 20, 2002
TSF Burn Pit (TSF-03)	March 23, 2004
WRRTF Burn Pits I, II, III and IV (WRRTF-01)	March 23, 2004

1.1 Work Plan Organization

This work plan is designed as a handbook for implementing OU 1-10 RD/RA activities. The work plan and its support documents describe the sites, contaminants, project management, tasks, schedules, and cost estimates. The following are brief descriptions of the work plan sections and appendices:

- Section 1 describes the background and history of WAG 1 and gives an overview of the selected remedies for the areas of concern.

- Section 2 provides the design criteria, including the design codes and standards, assumptions, and quality assurance.

- Section 3 discusses the remedial design of the project. A summary of the required earthwork is presented, as well as controls for surface water and erosion. Subcontractor staging, post-closure monitoring, and the operation and maintenance (O&M) plan is introduced.

- Section 4 is the initial evaluation of WAG 1, which includes an evaluation of the potential risks to human health and the environment. Descriptions of existing site conditions, potential migration and exposure pathways, and an assessment of exposure routes are provided. Also, the remedial action objectives (RAOs) and applicable or relevant and appropriate requirements (ARARs) are identified.

- Section 5 outlines the OU 1-10 remedial action work plan. This section includes the necessary steps and documentation required to complete the remedial action described in Sections 1 through 4. Remedial action work tasks, project cost estimates, inspections, and environmental and safety plans are included in this section.

- Section 6 describes the necessary actions involved for each five-year review by the Agencies to occur after the remedial action has taken place.

- Section 7 is a listing of reference material.

- Appendix A, Design Drawings, contains drawings that detail the present conditions (topography, fencing, etc.) at each site, as well as the work to be performed during the remedial action. **(NOTE:** Appendix A design drawings will not be complete until the results of post ROD sampling at TSF-06 Area B and TSF-26 are obtained).

- Appendix B, Technical Specifications for Test Area North, Waste Area Group 1, Remedial Design/Remedial Action, Operable Unit 1-10, contains the specifications that provide the general terms and conditions for the subcontractor to complete the remedial action.

- Appendix C, Quality Level Evaluation, assigns a quality level to the remedial action.

- Appendix D, Air Emissions Modeling Results, presents a summary of the results of the air emissions to satisfy project ARARs.

- Appendix E, Selected Remedy Cost Estimates, provides costs for each remedial activity addressed in this RD/RA work plan.

- Appendix F, WRRTF-13 Post-ROD Sampling Data and Risk-Based Corrective Action (RBCA) Analysis, provides information regarding the results of the post-ROD sampling activities at WRRTF-13 and the results of the State of Idaho RBCA Guidance (IDEQ 1996a) analysis.

- Appendix G, Comment Resolution Forms for Draft Remedial Design/Remedial Action Work Plan and Associated Documents, provides the comment resolution forms that were used to resolve the Draft comments on the RD/RAWP and associated documents.

1.2 Background

The INEEL is a government-owned/contractor operated facility managed by the DOE-ID (Figure 1-1), located 51 km (32 mi) west of Idaho Falls, Idaho. The INEEL occupies 2,305 km^2 (890 mi) of the northeastern portion of the Eastern Snake River Plain and encompasses portions of five Idaho counties: (1) Butte, (2) Jefferson, (3) Bonneville, (4) Clark, and (5) Bingham County. TAN is located at the northern end of the INEEL and was originally built between 1954 and 1961 to support the Aircraft Nuclear Propulsion Program sponsored by the U.S. Air Force and the Atomic Energy Commission. The program's objectives were to develop and test designs for nuclear-powered aircraft engines. Upon termination of this research in 1961, the area's facilities were converted to support a variety of other DOE research projects.

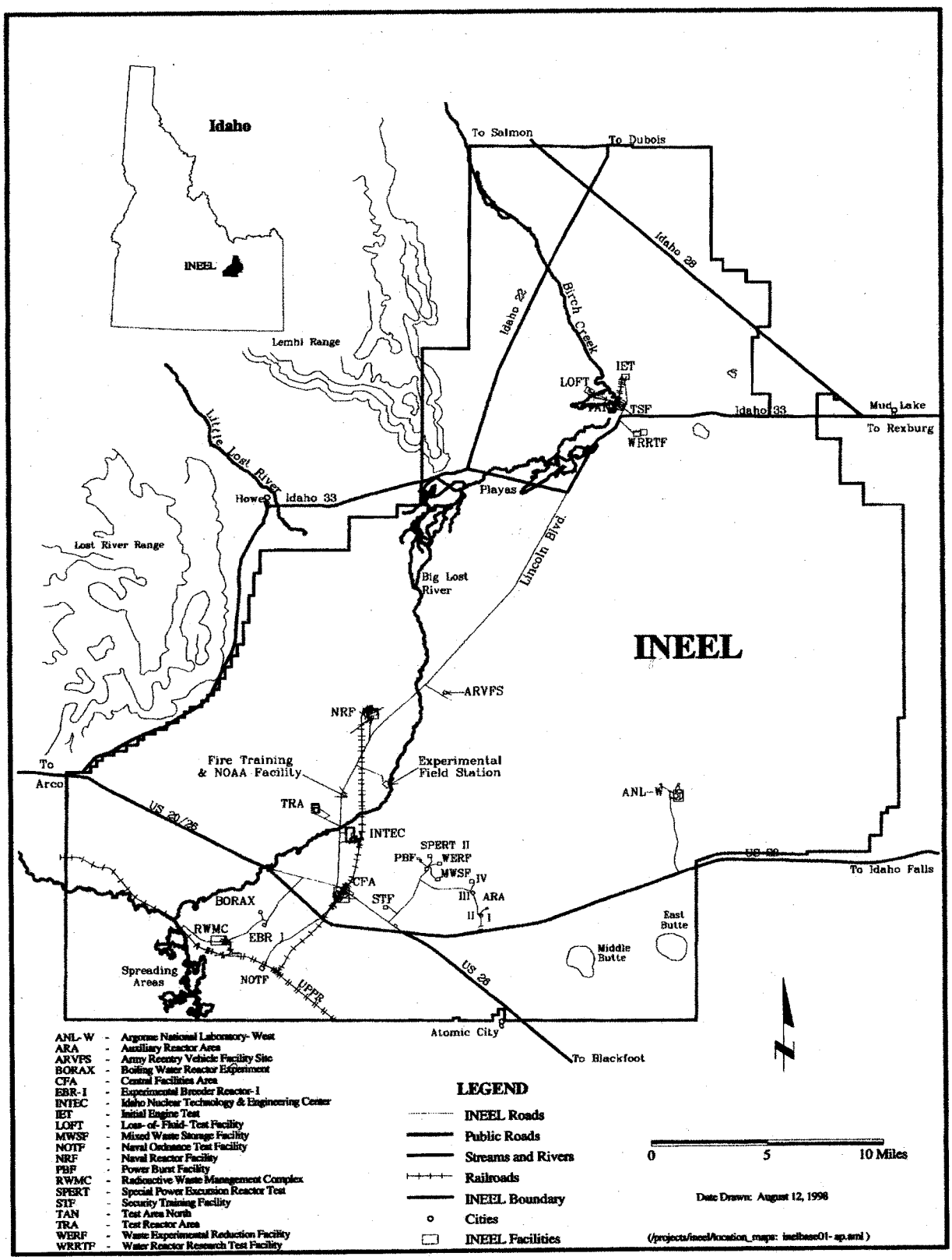


Figure 1-1. Location of Test Area North at the Idaho National Engineering and Environmental Laboratory.

From 1962 through the 1970s, the area supported reactor safety testing and behavior studies at the Loss-of-Fluid Test Facility. Beginning in 1980, the area was used to conduct work with material from the 1979 Three Mile Island reactor accident. Current activities include the manufacture of armor for military vehicles at the Specific Manufacturing Capability Facility and nuclear inspection and storage operations at TSF and WRRTF. The Initial Engine Test Facility is currently being deactivated, decommissioned, and dismantled by the INEEL decontamination and dismantlement (D&D) program.

The following sections provide brief descriptions of the four sites at TAN covered under this specific RD/RA work plan that require remediation per the ROD. Figure 1-2 includes the Soil Contamination Area South of the Turntable, the Disposal Pond, and the PM-2A Tanks, and Figure 1-3 shows the Fuel Leak site. The contaminants of concern (COCs) for each of the sites and their associated final remediation goals (FRGS) are summarized in Table 1-3.

1.2.1 Soil Contamination Area South of the Turntable (TSF-06, Area B)

The Soil Contamination Area South of the Turntable is an open area bounded by the TSF fence on the west and by facility roads and several adjacent structures on the east and south (Figure 1-2). This area is roughly triangular and measures 205.8-m (675-ft) wide on the south and 129.6 m (425 ft) on the west (DOE-ID 1997a).

Surface soil at the site was contaminated by windblown radioactive particles from the contaminated soils at the PM-2A Tanks area (TSF-26). Cesium-137 contamination remains in a 152- by 30.5-m (500- by 100-ft) area after the OU 10-06 removal action. This area has been surveyed routinely by TAN personnel and was covered with 0.3 to 0.6 m (1 to 2 ft) of soil in 1992 (INEL 1994). This additional soil, added in 1992, is referred to as the TSF-06 overburden, and the underlying contaminated soil is referred to as the TSF-06 native soil. Since, 1992, the TSF-06 overburden has been contaminated with Cs-137 by windblown contamination from stockpiles at the PM-2A Tanks site (Section 1.2.3). Post-ROD sampling was performed on the TSF-06 overburden to identify the contaminated area. In order to complete post-ROD sampling, the TSF-06 overburden was removed; soil greater than the FRG was placed in soil bags for disposal and soil less than the FRG was stockpiled separately. Section 2.9.1 further explains the sampling and removal of TSF-06 overburden. Post-ROD radiological sampling of the TSF-06 native soil will further identify areas that are greater than the 23.3 pCi/g Cs-137 FRG.

The COC at the site is Cs-137. A layer of radionuclide contamination is suspected to be limited to beneath the overburden soil at a depth of 0.3 to 0.6 m (1 to 2 ft). Contaminated soil exceeding the Cs-137 FRG of 23.3 pCi/g will be excavated to a maximum depth of 3 m (10 ft) below ground surface (bgs). Cesium-137 contaminated soil is suspected to extend underneath Snake Avenue. The TSF-06 remedial action will include removing the Snake Avenue asphalt (if sampling shows this is necessary), sampling the underlying soils for Cs-137, and excavating soils exceeding the Cs-137 FRG of 23.3 pCi/g under Snake Avenue, to a maximum depth of 3 m (10 ft) bgs. Contaminated soils from this area will be excavated for on-Site disposal, if a suitable on-Site soil repository is available at the time of the removal action. Waste management for this site will depend upon a no-longer-contained-in determination, which will be prepared and submitted to IDEQ with the results of post-ROD sampling.

1.2.2 Disposal Pond (TSF-07)

The Disposal Pond is a 14-ha (35-acre), unlined disposal pond in the southwest portion of TSF. The Disposal Pond is surrounded by a 1.5-m (5-ft) tall berm. Based on available field screening data, 12-ha (30 acre) of the Disposal Pond have never received wastewater and are not contaminated.

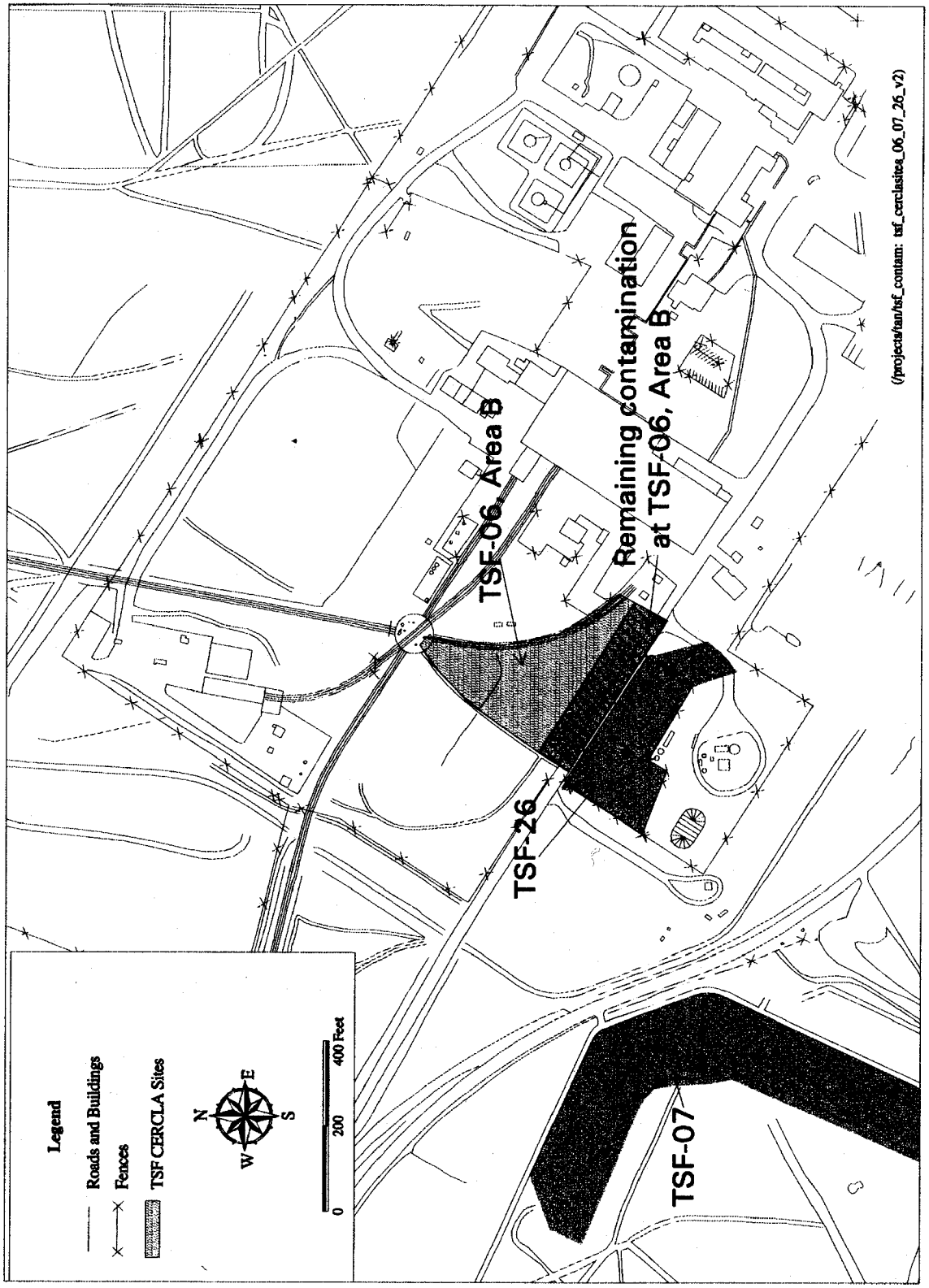


Figure 1-2. Soil Contamination Area South of the Turntable (TSF-06, Area B), Disposal Pond (TSF-07), and PM-2A Tanks (TSF-26).

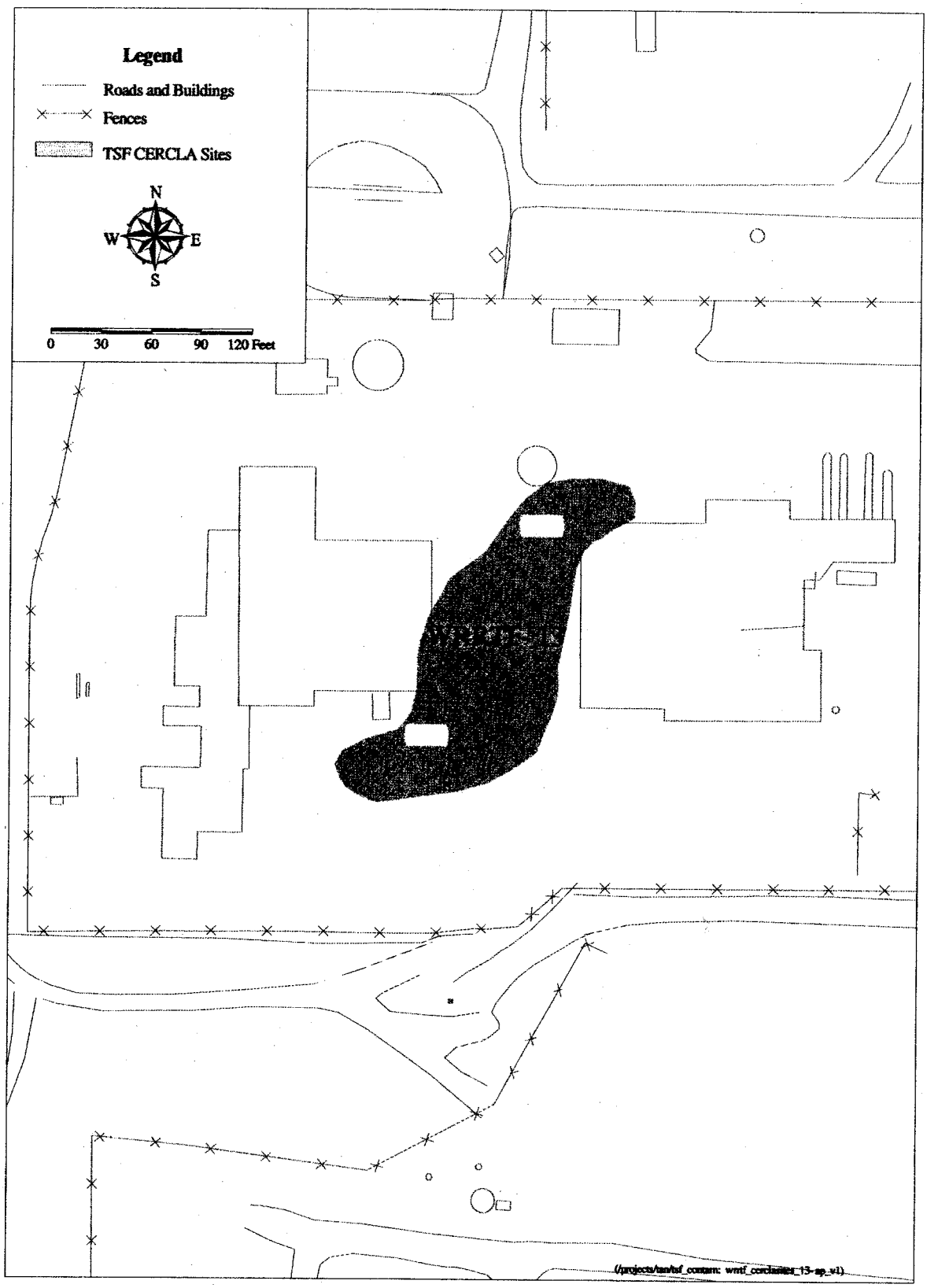


Figure 1-3. Fuel Leak site (WRRTF-13).

Table 1-3. Contaminants of concern and final remediation goals for the OU 1-10 selected sites.

Site	Contaminants of Concern	Final Remediation Goal
Soil Contamination Area South of Turntable (TSF-06, Area B)	Cs-137	23.3 pCi/g[a]
Disposal Pond (TSF-07)	Cs-137	23.3 pCi/g[a]
PM-2A Tanks (TSF-26)	Cs-137	23.3 pCi/g[a]
Fuel Leak site (WRRTF-13)	Petroleum hydrocarbon constituents	NA[b]

a. The final remediation goal of 23.3 pCi/g for Cs-137 at this site will allow unrestricted land use in 100 years. Therefore, institutional controls will be used at this site until it is available for unrestricted land use. The WAG 1 institutional control plan (DOE-ID 2000a) will implement all institutional control requirements for WAG 1.
b. The final remediation goal at WRRTF-13 is not applicable because the site will not require remedial action to meet State of Idaho RBCA requirements. Appendix F contains the RBCA analysis for this site.

NA = not applicable
RBCA = risk-based corrective action

The remaining 2-ha (5-acre) in the northeast corner and on the eastern edge of the pond has been contaminated with Cs-137 and metals. However, it was assumed in the RI/FS that the area of contamination covers the entire main pond and overflow pond surfaces. Previous sampling activities indicate that the Cs-137 has migrated to approximately 3 m (11 ft) below the bottom of the pond in this area. Historically, the pond received sanitary waste discharges, low-level radioactive waste, industrial wastewater, and treated sewage effluent.

The Disposal Pond replaced the TSF-05 Injection Well and began receiving wastewater in September 1972. The pond received wastewater from a variety of sources that included sanitary waste discharges, low-level radioactive waste, cold process water, and treated sewage effluent that originated from TAN service buildings and process.

Current discharges to a 1-ha (2.5 acres) portion of the Disposal Pond are permitted by the State of Idaho to receive sanitary and industrial waste (DOE-ID 1997a). In addition, a section of the pond was portioned in 1992-1993 for discharge of treated effluent from the *TSF-05 Injection Well Contaminated Groundwater OU 1-074 Interim Action* (DOE-ID 1997b). This active portion of the pond will undergo assessments when operations cease.

The selected remedial action at this site will consist of institutional controls and environmental monitoring. Details of the required institutional controls at the site will be provided in the WAG 1 institutional control plan (DOE-ID 2000a). Details of the environmental monitoring at this site are in the operations and maintenance plan (DOE-ID 2001b).

1.2.3 PM-2A Tanks Site Soil Contamination Area (TSF-26)

The PM-2A Tanks consists of the contaminated surface soil surrounding two abandoned underground storage tanks (see Figure 1-2). The tanks were installed in the mid-1950s and stored concentrated low-level radioactive waste from the TAN-616 Evaporator from 1955 to 1972 (DOE-ID 1997a). In 1972, a new evaporator system (the PM-2A System) was installed in the TSF-26 area to replace the existing TAN-616 Evaporator System that was failing. The tanks served as feed tanks for the new evaporator system in which liquid waste was evaporated, condensed, passed through an ion-exchange column, and discharged as clean water into the Disposal Pond (TSF-07). The system was shut down in 1975 because of operational difficulties and spills (DOE-ID 1997a).

During the 1981 and 1982 D&D of the PM-2A Tanks site, most of the liquid in the PM-2A Tanks was pumped out into concrete containers, mixed with cement, and shipped to the Radioactive Waste Management Complex (RWMC) for burial. The residual liquid was absorbed by material incorporated into the tanks to absorb free liquid (DOE-ID 1997a). This sludge mixture is contaminated with radionuclides, metals, organic compounds, and polychlorinated biphenyls (PCBs) (DOE-ID 1999).

The soil above the tanks was contaminated by spills containing radionuclides and hazardous constituents, including metals (barium, cadmium, chromium, lead, mercury, and silver), volatile organic compounds (VOCs) (trichloroethene, 1,1,1-trichloroethane, carbon tetrachloride, and acetone), semivolatile organic compound (SVOCs), PCBs, and radionuclides (Cs-137, Co-60, and Sr-90) when waste was transferred from the tanks. The only contaminants in the soils based on recent sampling at TSF-26 are radionuclides, primarily Cs-137. The soils must still be managed as F001 listed based on process knowledge.

Contaminated soil was removed in 1996 as part of the OU 10-06 removal action. What appeared to be the top of a wooden box was discovered at the PM-2A Tanks during the 1996 OU 10-06 removal action. Three soil stockpiles remain at the PM-2A Tanks after the OU 10-06 removal action because gamma radiation readings from the stockpiles were greater than allowed by the project work control documentation at the time. From past removal actions, the PM-2A Tanks site is an average of 1.5 m (5 ft) below surrounding land surface. The remedial action requires excavation to 3 m (10 ft) below land surface (bls) from the surrounding elevation. Therefore, an average of 1.5 m (5 ft) will be further removed from this area.

The PM-2A Tank remedial action that will occur under this work plan will be the placement of clean fill material over the entire area to mitigate further contaminant migration until remedial action can occur, and the excavation and disposal of soils greater than the FRG of 23.3 pCi/g Cs-137, to a maximum depth of 3 m (10 ft) bls from the surrounding land surface. The remaining remedial action at this site will include removal and disposal of the tank contents, decontamination of the tanks, filling the tanks with inert material, and backfilling the PM-2A area to surrounding contours. This remaining work will be performed under the OU 1-10 Group 2 and 3 RD/RA Work Plan. Waste management for this site will depend upon a no-longer-contained-in determination, which may be prepared and submitted to IDEQ.

1.2.4 Fuel Leak Site (WRRTF-13)

The WRRTF-13 Fuel Leak site is defined as the WRRTF Fuel Leak Site/Contamination Plume that is under the area where tanks were removed. The tanks, TAN-738, TAN-739, and TAN-787, were located between TAN Buildings 641 and 645 (Figure 1-3). Numerous diesel and heating fuel tanks and transfer lines have supplied the buildings within WRRTF during its operational life. Most of these tanks and lines have been taken out of service and removed. Several of the tanks and transfer lines, including tanks TAN-738, TAN-739, and TAN-787, were removed and disposed in the early 1990s. Contaminated soil associated with these tanks was encountered and removed, and the excavated areas were backfilled with clean soil (DOE-ID 1999). However, residual contamination remains in soil below and adjacent to several buildings currently in use at TAN (DOE-ID 1999). It has been determined that this residual contamination in the subsurface resulted from leaks and spills of diesel fuel at the former locations of tanks TAN-738, TAN-739, and TAN-787, and the transfer piping between tanks TAN-787 and TAN-738.

Tank TAN-738 was installed in 1959 and supplied heating oil to the boilers in building TAN-641. In 1963, tank TAN-787 was installed. It was connected to tank TAN-738 in 1976 when a 3.8-cm (1.5-in.) stainless steel line was installed, along with new boilers in building TAN-641. The tanks and piping remained in active service until 1991. TAN-738 was taken out of service in September 1991, and the transfer line was modified to allow the boilers in TAN-641 to be fed directly from Tank TAN-787. When taken out of operation, the tank TAN-738 had deteriorated, and the remaining oil was transferred into tank TAN-787. During a start-up test of the boilers in October 1991, an estimated 7,949 to 13,627 L (2,100 to 3,600 gal) of diesel fuel was unaccounted for. It was suspected that either the transfer line was leaking or the boiler meters were not functioning properly. A pressure leak test indicated that a portion of the transfer piping was leaking. During excavation of the transfer line, the soil below the piping appeared discolored and smelled strongly of petroleum products. Tanks TAN-738 and TAN-787 were removed in December 1991. When removed, TAN-738 contained numerous small holes, and soil below the tank both smelled and appeared contaminated with diesel fuel. Tank TAN-738 was replaced in 1991 by a 22,71 1-L (6,000-gal) stainless steel diesel fuel tank, which is currently in use (DOE-ID 1997c).

Because of analytical data limitations from previous investigations, soil sampling for benzene toluene, ethylbenzene, and xylenes and polynuclear aromatic hydrocarbons was conducted as part of the post-ROD sampling to evaluate data against the State of Idaho RBCA Guidance (IDEQ 1996a) to determine the FRG and to determine the volume of contaminated soil, if any, that must be excavated and land farmed. Post-ROD sampling at WRRTF-13 began February 28, 2000, and concluded March 2, 2000. The sample locations and sampling approach are given in the post-ROD field sampling plan (DOE-ID 2000c).

Seven borehole locations were selected based on site history to bias the samples toward areas of highest contamination. Borehole 1 was placed at the former location of tank TAN-738, which was known to have leaked, Borehole 2 was placed adjacent to tanks TAN-738 and -739. Boreholes 3 through 6 were placed along transfer piping that was known to have leaked. Finally, Borehole 7 was placed at the former location of tank TAN-787.

A Risk-Based Corrective Action (RBCA) analysis was performed on the data received from the analytical laboratory. The maximum concentration of each detected contaminant from all the samples collected were compared to the State of Idaho RBCA Tier 0 and Tier 1 screening concentrations. The maximum concentrations from this site exceeded both the Tier 0 and Tier 1 RBCA screening concentrations. To complete the RBCA analysis, a Tier 2 evaluation was done using the RBCA Software (State of Idaho RBCA Tier 2 Software, Version 1.0, July 1997). Input data to the RBCA software included: maximum concentrations, current land use is occupational, future land use will be residential, no surficial contaminated soil (which precluded calculating resident child risks due to soil ingestion), and identifying that the groundwater class is 2 since this flow rate is closer to the Snake River Plain Aquifer flow rate. The output for this evaluation is provided in Appendix F. As presented on page Fl-1, the cumulative risk at this site for the residential scenario is 1.17E-08 and the cumulative Hazard Index (HI) is 0.96. The cumulative risk for an industrial scenario is 2.65E-09 and the cumulative HI is 0.42. The Subsurface Soil Indoor Inhalation exposure pathway is the main contributor to the cumulative HI. The results of the RBCA Tier 2 analysis are below the Tier 2 evaluation criteria of 1E-05 cumulative risk and a HI of l.

The WRRTF-13 Site requires no remedial action, as determined from RBCA analysis. Thus, the site has been reclassified as a "No Action" site. Institutional controls will not be required at the Fuel Leak site (WRRTF-13).

1.3 Selected Remedy

The Agencies have selected the following remedies for the OU 1-10 sites addressed in this RD/RAWP, based on consideration of the requirements of CERCLA, the detailed analysis of alternatives, and public comments. Performance standards were implemented as design criteria for each of the four sites to ensure that the selected remedy is protective of human health and the environment. Five-year reviews will be used at all sites where contamination remains with risk >1E-04 to ensure that the selected remedy for the sites remains protective and appropriate. Confirmation sampling will be conducted at the two sites to be remediated by excavation to verify that RAOs and FRGs are met.

1.3.1 Description of Selected Remedy

The selected remedies for each of the four sites are described in the following sections.

1.3.1.1 Soil Contamination Area South of the Turntable (TSF-06, Area B). The selected remedy for the Soil Contamination Area South of the Turntable is Excavation and Disposal. This remedy is consistent with previous removal actions at TAN and will consolidate the low-level radionuclide-contaminated soil/sediments in a centralized repository. Excavation will involve removal of soils above 23.3 pCi/g Cs-137 to a maximum depth of 3 m (10 ft), and includes contaminated soil that may be identified under Snake Avenue as part of the TSF-06, Area B remedial action. Excavated soils will be disposed at the proposed INEEL CERCLA Disposal Facility (ICDF), RWMC, or another facility on or off the INEEL. Verification sampling will be conducted to ensure that all contamination present above the FRG is removed. The excavated areas will be backfilled with clean soil and seeded after excavation. Institutional controls will be maintained until the site is available for unrestricted land use and will be reevaluated during five-year reviews.

1.3.1.2 Disposal Pond (TSF-07). The selected remedy for the Disposal Pond is Limited Action. This remedy is specific to implementing existing management practices, including institutional controls and environmental monitoring, and will continue until the Agencies agree that this site no longer poses an imminent and substantial endangerment to human health and the environment. This selected remedy includes installation of warning signs to prevent access. Although contamination will remain in place, the radioactivity will decay to less than unrestricted land use concentrations within the period of institutional controls. Implementation of institutional controls and environmental monitoring will be expanded to accommodate site-specific concerns as needed. Details of the warning signs and administrative controls to be used at the Disposal Pond are in the WAG I Institutional Control Plan (DOE ID 2000a).

The OU 1-I0 ROD states that no-longer-contained-in (NLCI) sampling will be performed at the Disposal Pond (TSF-07). However, the IDEQ has indicated that a NLCI determination is used to remove Resource Conservation and Recovery Act (RCRA) waste codes for generated wastes. The Limited Action remedy at the Disposal Pond will not generate wastes that will require a NLCI determination for disposal. Therefore, a NLCI determination and NLCI sampling are not required for the Disposal Pond (TSF-07).

Note: The pond will continue to receive wastewater until TSF ceases operation.

1.3.1.3 PM-2A Tanks Site Soil Contamination Area (TSF-26). The selected remedy for the PM-2A Tanks is Soil Excavation, Tank Content Vacuum Removal, Treatment, and Disposal. The soil excavation and disposal tasks at the PM-2A Tanks site to a maximum depth of 3 m (10 ft) bls will be completed as part of the Group 1 sites RD/RAWP; the remaining tank content vacuum removal and treatment, if required, will be completed as part of the subsequent Group 2 and 3 sites

RD/RA work plan. Excavation will involve removing contaminated soil that is above the 23.3 pCi/g FRG for Cs-137 to a maximum depth of 3 m (10 ft), and packaging and transporting the soil for disposal at the ICDF, RWMC, or another facility on or off the RAM. The disposal is also applicable to the TSF-26 stockpiles and wooden box that were bagged to support post-ROD sampling activities. Using radiological screening, uncontaminated soils (those with activities less than the FRG) will be stockpiled separately from the contaminated soils. Waste characterization sampling will be conducted on the stockpiled soils. Verification sampling will be conducted to ensure that all contamination present above the FRG is removed.

Based on the sampling results, uncontaminated soil will be placed over any remaining contaminated soil greater than a depth of 3 m (10 ft) bls to prevent further spread of contamination. Backfilled areas will be seeded to minimize erosion. Institutional controls will be evaluated based on the results of the verification sampling. Institutional control will be maintained until the site is available for unrestricted land use and will be reevaluated during five-year reviews.

1.3.1.4 Fuel Leak Site (WRRTF-13). The remedy selected in the ROD for the Fuel Leak site was Excavation and Land Farming of contaminated soil exceeding the FRG. Post-ROD sampling was conducted at this site as discussed in Section 1.2.4 of this RD/RAWP. Based on the sample results and the current and future land use assumptions for this site, the RBCA Tier 2 evaluation, as presented in Appendix F, concludes contaminants at the site did not exceed FRGs. Thus, the site requires no remedial action activities. Remedial action at the WRRTF-13 site will not be discussed any further in this document.

2. DESIGN BASIS

2.1 General Description of the Project Components

The project components (support facilities, electrical power, and Title III services) are described in the following subsections.

2.1.1 Support Facilities

The location of the support facilities is identified on Drawing 1 (Appendix A). Support facilities to be used during the construction include subcontractor trailer(s), parking, laydown areas, and temporary stockpile area(s).

2.1.2 Electrical Power

Electrical power is available at the TSF facility for project use.

2.1.3 Title III Services

Title III services are provided by the INEEL Management and Operation (M&O) contractor, on an as-needed basis, for engineering support during preconstruction, construction, and at construction closeout. The INEEL M&O contractor will assist in reviewing construction interface documents and subcontractor vendor data submittals. During construction, the INEEL M&O contractor will provide a representative(s), as requested, to evaluate design modifications.

2.2 Design Criteria

The objective of this remedial action is to inhibit potential exposure for human and environmental receptors and to minimize the spread of contamination. For the Soil Contamination Area South of the Turntable and the PM-2A Tanks soils, the objective will be accomplished through excavation of the soils with contamination present above the FRG and disposal of these soils in the proposed ICDF or another facility that can accept these soils. For the Disposal Pond, the objective will be accomplished by continuing to use existing management practices, including institutional controls and environmental monitoring. The objective has already been achieved at the Fuel Leak site, based upon results presented in Appendix F.

2.2.1 Management and Operation Control Procedures

Title I, II, and III will be performed in compliance with pertinent INEEL M&O contractor management control procedures (MCPs). Current MCPs can be found on the INEEL intranet. MCPs for this project are those identifying requirements in the following areas:

- Engineering Design
- Emergency Preparedness and Management
- Fire Protection
- Management Systems

- Occupational Safety and Health
- Radiological Protection
- Security
- Environmental Restoration
- Waste Management
- Conduct of Maintenance
- Quality.

2.2.2 Soil Contamination Area South of the Turntable (TSF-06, Area B)

The Soil Contamination Area South of the Turntable design criteria include:

- Preparation of a hazardous waste determination (HWD) to determine final waste disposition for remedial action waste in compliance with 40 Code of Federal Regulations (CFR) 262.11. An INEEL Waste Determination and Disposition Form (WDDF) (Form 435.39) will serve as the HWD and is in compliance with 40 CFR 262.11.
- Excavation of contaminated soil exceeding the 23.3 pCi/g Cs-137 FRG, and storage of the waste in a CERCLA Storage Area until shipment to the disposal facility
- Snake Avenue sampling and possible excavation, and the replacement of Snake Avenue
- Post-remediation sampling after excavation to verify FRGs are met
- Excavation activities to be coordinated with TSF and TAN operations
- Use of locally available, naturally occurring, clean fill material found at the INEEL to the extent practicable
- Compacting, contouring, grading, and seeding with native vegetation
- Institutional controls will be required based upon the results of confirmation sampling at the completion of the remedial action.

2.2.3 Disposal Pond (TSF-07)

The Disposal Pond design criteria include:

- Preparation of a HWD to determine final waste disposition for personal protective equipment, debris, and other wastes in compliance with 40 CFR 262.11. An INEEL WDDF will serve as the HWD and is in compliance with 40 CFR 262.11.
- The limited remedial activities will be coordinated with TSF and TAN operations.

- New warning signs will be attached to the Radiation Control fence around the perimeter of the Disposal Pond, as designated in the WAG 1 institutional control plan (DOE-ID 2000a).

2.2.4 PM-2A Tanks (TSF-26)

The PM-2A Tanks design criteria include:

- Preparation of a HWD to determine final waste disposition for remedial action waste in compliance with 40 CFR 262.11. An INEEL WDDF will serve as the HWD and is in compliance with 40 CFR 262.11.
- Excavation of contaminated soil exceeding the 23.3 pCi/g Cs-137 FRG, and storage of the waste in a CERCLA Storage Area until shipment to the disposal facility.
- Removal and disposal of debris.
- Excavation activities to be coordinated with TSF and TAN operations.
- Post-remediation sampling after excavation to verify FRGs are met.
- Use of locally available, naturally occurring, clean fill material found at the INEEL, to the extent practicable.
- Compacting, contouring, grading, and seeding with native vegetation.
- Institutional controls will be required based on the results of confirmation sampling at the completion of the Group 2 and 3 remedial action.

2.3 DOE Related Codes, Standards, and Documentation

The following national standards, codes, and regulations and sub-tier standards, codes, and regulations, and site-specific documents will be used as the basis for the remediation of OU 1-10:

- DOE Order 5480.4, Environmental Protection, Safety, and Health Protection Standards
- DOE Order 435.1, Chapter IV, Radioactive Waste Management
- DOE Order 5400.5, Radiation Protection of the Public and the Environment
- DOE Order 414. IA, Quality Assurance
- DOE Order 232.1A, Occurrence Reporting and Processing of Operations Information
- DOE Order 231.1, Environment, Safety, and Health Reporting
- DOE Order 440.1 A, Worker Protection Management for DOE Federal and Contractor Employees
- DOE Order 470.1, Safeguards and Security Program.

2.4 Engineering Standards

Appendix B contains references to the latest engineering standards and the specifications to which they apply.

2.5 Regulatory Requirements

A detailed discussion of the ARARs is presented in Section 4 of this work plan.

2.6 General Design Assumptions

The bounding assumptions under which the RD/RA activities will be performed include the following for all sites:

1. Institutional controls will be implemented and maintained at all sites where risk >1E-04. The continued need for institutional controls will be evaluated by the Agencies during each five-year review (see the WAG 1 institutional controls plan for these sites [DOE-ID 2000a]).

2. The remedial design for Group 1 sites will occur in Fiscal Year (FY) 2000, and all remedial actions for Group 1 sites, except contingent remedy implementation, will occur between FY 2000 and FY 2004. The O&M and environmental monitoring will continue as agreed upon by the Agencies.

3. HWDs will be completed for miscellaneous wastes from all the sites after receipt of analytical data and before any removal actions at these sites. This will determine where waste generated from the remedial action will be disposed.

4. A post-ROD sampling and analysis plan was prepared and implemented with a post-ROD health and safety plan (HASP) to address data collection for TSF-06 Area B, TSF-26, and WRRTF-13.

2.7 Site-Specific Design Assumptions

The following sections address those assumptions that are specific to a particular remedial action:

2.7.1 Soil Contamination Area South of the Turntable (TSF-06, Area B)

1. The assumption has been made that impacts to TAN operations will be kept to a minimum. Activities at TSF-06, Area B will close Snake Avenue, the main thoroughfare from the Specific Manufacturing Capability (SMC) area to the TSF area.

2. Contaminated soil exceeding the 23.3 pCi/g Cs-137 FRG will be excavated and disposed at the proposed ICDF or another facility that can accept this soil.

3. Excavation/disposal activities will begin as soon as practical.

4. Excavated material will be dispositioned based on validation or verification sampling and is assumed to be acceptable for disposal at the proposed ICDF or another facility that can accept this soil.

5. Verification sampling will be required to ensure that FRGs have been met.

6. Radiological surveys will be conducted around the perimeter of the TSF-06, Area B Site annually. Out-year O&M will consist of inspecting subsidence, erosion, burrowing intruders, and correcting any found deficiencies. Details of the O&M are found in the OU 1-10 O&M plan (DOE-ID 2001b).

7. Five-year site reviews will be conducted to evaluate the effectiveness of the remedy.

2.7.2 Disposal Pond (TSF-07)

1. Existing administrative and institutional controls will be evaluated, and if deemed appropriate, will be revised with new, upgraded practices and controls. Details of institutional control requirements at the Disposal Pond are in the WAG 1 institutional control plan (DOE-ID 2000a).

2. Radiological surveys around the perimeter of the Disposal Pond will be conducted annually, and sampling for Cs-137 will be conducted in 2071 to verify the site is available for unrestricted land use. No O&M is presently planned at this site.

3. Impacts to TAN operations will be kept to a minimum.

4. Five-year site reviews will be conducted to evaluate the effectiveness of the remedy.

2.7.3 PM-2A Tanks (TSF-26):

1. Contaminated soil exceeding the FRG will be excavated to a maximum depth of 3 m (10 ft) and disposed at the proposed ICDF or another facility that can accept this soil.

2. Excavation/disposal activities will begin as soon as practical.

3. Excavated material will be dispositioned based on validation or verification sampling and is assumed to be acceptable for disposal at the proposed ICDF or another facility that can accept this soil.

4. Verification sampling will be required to ensure that FRGs have been met.

5. Radiological surveys around the perimeter of the PM-2A Tanks will be conducted annually until final completion of remedial action at the site. However, long-tern environmental monitoring will not be required following completion of the removal action. Out-year O&M will consist of inspecting subsidence, erosion, burrowing intruders, and correcting any found deficiencies. Details of the O&M are found in the OU 1-10 O&M plan (DOE-ID 2001b).

6. Five-year site reviews will be conducted to evaluate the effectiveness of the remedy.

2.8 Quality Assurance

A quality level designation and record, included as Appendix C, has been prepared for all the activities of the project. A quality level of 3 has been deemed appropriate for this project. All design, procurement, and construction activities will be in accordance with the Quality Level 3 designation.

The *Implementing Project Management Plan for the INEEL Remediation Program* (INEEL 1998a), hereinafter referred to as the project management plan, has been adopted for this project and is incorporated by reference. The guidance governs the functional activities, organization, and quality assurance/quality control protocols that will be used for this project.

Where applicable, the project specifications (Appendix B) will specify the quality assurance/quality control (QA/QC) procedures for the given task, consistent with guidance provided by the project management plan and the Quality Level 3 designation.

2.9 Post-ROD Sampling Summary

This section briefly describes the activities associated with the post-ROD sampling and field screening. The field activities are modeled after the selected remedial actions presented in the ROD (DOE-ID 1999) at three identified OU 1-10 release sites (Soil Contamination Area South of the Turntable [TSF-06, Area B], PM-2A Tanks [TSF-26], and Fuel Leak site [WRRTF-13]). The sampling activities at each of the sites as addressed in the post-ROD field sampling plan (DOE-ID 2000c) are as follows:

2.9.1 Soil Contamination Area South of the Turntable (TSF-06, Area B)

During post-ROD sampling activities it was identified through investigations with TAN Operations personnel and research into the history of the site, that the remaining contamination in the 152-m (500-ft) by 15-m (50-ft) area (not including the road) had 0.3 m (1 ft) to 0.6 m (2 ft) of clean fill material placed in this area by TAN Operations Radiation Control to shield from radioactive material. This overburden material was rad-surveyed using the procedure as identified in the post-ROD field sampling plan (DOE-ID 2000c) and contaminated material with concentrations greater than the FRG of 23.3 pCi/g Cs-137 was removed, placed into soil bags, and is being stored in the Radioactive Parts Security Storage Area (RPSSA) at TAN as a potentially mixed and PCB waste until shipment to a disposal facility on or off the INEEL occurs. The potential presence of PCBs will be managed according to 40 CFR 761.50 (b)(7)(ii).

The contamination in the overburden came from windblown contamination from the PM-2A soil stockpiles. Once a NLCI determination is obtained for the stockpiles, a NLCI determination for the overburden material will be generated based on the soil stockpile data and will be disposed of as low-level waste only. A total of approximately 420 m^3 (550 yd^3) of contaminated material was removed, and the remaining overburden material that was below the FRG for Cs-137 was scraped to the side to facilitate post-ROD rad surveying of the native soil. The rad survey of the native soil will identify areas where the soil concentration exceeds the FRG of 23.3 pCi/g Cs-137.

2.9.2 PM-2A Tanks Site Soil Contamination Area (TSF-26)

Post-ROD sampling activities at the PM-2A Tanks will include sampling and analysis for: (1) three soil stockpiles, (2) wooden box, and (3) Cs-137 contamination delineation. Waste material generated at the PM-2A Tanks, including personal protective equipment PPE and sampling wastes, will be managed as potentially RCRA-listed (F001) waste, due to the suspected presence of trichloroethene, 1,1,1-trichloroethane, and carbon tetrachloride. The potential presence of PCBs will be managed according to 40 CFR 761.50(b)(7)(ii), taking into account the results of post-ROD PCB sampling at the site.

The following subsections further describe each of the three sampling activities at the PM-2A Tanks.

2.9.2.1 Soil Stockpiles. Three soil stockpiles remain at the PM-2A Tanks after the 1996 OU 10-06 removal action. Sampling data will be used to support a no-longer-contained-in determination for the stockpiles. The stockpiled soils will be sampled for contaminants known to have been present in the PM-2A Tanks. Analyses will include Universal Treatment Standard metals, toxicity characteristic

leaching procedure metals, Contract Laboratory Program (CLP) VOCs, CLP SVOCs, PCBs, and gamma spectroscopy.

Once the samples were collected from the stockpiles, they were excavated and placed into soil bags and are being stored in the RPSSA at TAN until shipment to a disposal facility occurs. A total of 107 m^3 (140 yd) of contaminated waste was generated.

2.9.2.2 Wooden Box. The top of what appeared to be a wooden box was discovered at the PM-2A Tanks during the 1996 OU 10-06 removal action. It was not sampled nor removed during the OU 10-06 removal action because the contents of the box were unknown. Samples will be collected from inside the wooden box and analyzed for Universal Treatment Standard (UTS) metals, toxicity characteristic leaching procedure metals, CLP VOCs, CLP SVOCs, PCBs, and gamma spectroscopy. Data obtained will be used to complete the OU 1-10 RD/RA work plan and to determine the appropriate disposition for the contents of the wooden box.

Once the samples were collected from the wooden box, it was excavated with additional soil surrounding the wooden box, placed into soil bags, and is being stored in the RPSSA at TAN until shipment to a disposal facility occurs. A total of 8 m^3 (10 yd^3) of contaminated waste was generated.

2.9.2.3 Cs-137 Contamination Delineation. The boundaries of Cs-137 contaminated soil at the PM-2A Tanks will be located and delineated using a three-step sampling approach to identify areas with Cs-137 concentrations greater than the FRG of 23.3 pCi/g. Biased samples (determined from the results of the first two field screening sampling steps) will be taken and submitted for a 20-minute gamma spectrometric analysis to identify areas requiring excavation. Once the areas requiring excavation are identified, additional samples will be collected to obtain data for a no-longer-contained-in determination. Both the radiological sampling and no-longer-contained-in sampling are described in the post-ROD Field Sampling Plan (DOE-ID 2000c). The data gathered during the post-ROD sampling activities will be used to support waste disposal and identify where Cs-137 soil concentrations exceed the FRG of 23.2 pCi/g.

2.9.3 Fuel Leak Site (WRRTF-13)

Diesel and fuel oil contaminants, including benzene, toluene, ethylbenzene, and zylenes and polynuclear aromatic hydrocarbons, will be identified in the Fuel Leak soil using a statistically defensible sampling design. The sampling results will be used to determine risk-based remediation goals in accordance with the State of Idaho RBCA *Guidance Document for Petroleum Releases* (IDEQ 1996a) and IDEQ *Information Series #7: Procedures for and Treatment of Petroleum Contaminated Soils* (IDEQ 1996b), and to determine land farming excavation volumes.

3. REMEDIAL DESIGN

3.1 Project Site

This section describes the remedial design for OU 1-10 Group 1 sites, which was developed in accordance with the engineering design criteria presented in Section 2. The civil design drawings and specifications for the action(s) are included in Appendix A and Appendix B. Until completion of the post-ROD sampling activities, the design drawings in Appendix A will be incomplete. Site preparation, excavation, native soil cover replacement, site restoration activities, monitoring, and O&M will be addressed following the physical site description below.

3.2 Physical Site Description

The Soil Contamination Area South of the Turntable is an open area bounded by the TSF fence on the west, and facility roads and several adjacent structures on the east and south. The site is approximately 205.8 m (675 ft) wide on the southern boundary and 129.6 m (425 ft) wide on the western boundary.

The Disposal Pond is a 14-ha (35-acre), unlined disposal pond southwest of TSF. A 1-ha (2.5-acre) portion of the pond is still in use and will undergo assessment when operations cease. Only 2 ha (5 acres) in the northwest comer and on the eastern edge of the pond have been contaminated. Historically, the pond received sanitary waste discharges, low-level radioactive waste, industrial wastewater, and treated sewage effluent. The active portion of the pond is permitted by the State of Idaho to receive only sanitary and industrial waste.

The site known as the PM-2A Tanks consists of the contaminated surface soil surrounding two abandoned underground storage tanks. The soil above the tanks was contaminated by spills containing radionuclides and hazardous constituents, including Cs-137, when waste was transferred from the tanks. Contaminated soil was removed in 1996 as part of the OU 10-06 removal action. What appeared to be the top of a wooden box was discovered at the PM-2A Tanks during the 1996 OU 10-06 removal action. Three soil stockpiles remain at the PM-2A Tanks after the OU 10-06 removal action because gamma radiation readings from the stockpiles were greater than allowed by the project work control documentation at the time. Sampling following the removal action indicated an area of 30.5 m (100 ft) by 21.3 m (70 ft) to 5.2 m (17 ft) bgs contaminated with Cs-137 (DOE-ID 1999).

3.3 Site Preparation

The areas directly associated with the remedial actions of the Soil Contamination Area South of the Turntable and PM-2A Tanks will be cleared of vegetation in accordance with Specification 02110 (Appendix B). Fencing surrounding the immediate contaminated areas will be removed, if necessary. Radiation surveying will occur at the Soil Contamination Area South of the Turntable and at the PM-2A Tanks.

3.4 Earthwork

All earthwork at the Soil Contamination Area South of the Turntable and PM-2A Tanks involving excavation and backfill will be graded to encourage drainage away from the excavation (see Specification 02200, Earthwork in Appendix B). All areas that are disturbed by earthwork activities will be revegetated per the project specifications. Standard dust control measures (water spray, stop work during high winds, etc.) will be employed during all earthwork:

3.4.1 Soil Contamination Area South of the Turntable (TSF-06, Area B)

Earthwork at the Soil Contamination Area South of the Turntable will involve excavation of contaminated soil to a maximum of 3 m (10 ft) or the depth at which contaminant concentrations are above the FRG, whichever is less. The contaminated soil will be transported to the proposed ICDF or another disposal facility on or off the INEEL. Confirmation samples will be collected to verify that the remedial action met the FRG. The excavation will be backfilled with clean native soil and seeded to reestablish native vegetation.

3.4.2 PM-2A Tanks Site (TSF-26)

Earthwork at the PM-2A Tanks will involve excavation of contaminated soil to a maximum of 3 m (10 ft) bls or the depth at which contaminant concentrations are above the FRG, whichever is less. Radiological screening will be used to segregate soil that is less than the FRG from soil that exceeds the FRG. The contaminated soil will be transported to a disposal facility on or off the INEEL. Confirmation samples will be collected to verify that the remedial action met the FRG. Where confirmation sampling of the excavated areas indicates that contamination greater than the FRG remains below 3 m (10 ft) from surrounding land surface elevation, these areas will be backfilled with 0.15 m (0.5 ft) of clean native fill, pending additional excavation or backfilling during the Group 2 and 3 remedial action. The remainder of the PM-2A Tanks area will not be backfilled at this time. At the completion of the Group 2 and 3 remedial action at this site, the entire area within the TSF-26 fence will be brought up to surrounding grade and reseeded.

3.5 Warning Signs

Institutional controls (DOE-ID 2000a) will include warning signs that will be installed at the Disposal Pond to warn potential users of the underground contamination present in this area. Activities *will* be controlled by use of MCPs, Public Notices, DOE Orders, and DOE-ID Directives on Institutional Controls.

3.6 Surface Water

Contouring and grading of backfilled excavations will be performed to maintain existing surface water flow patterns at the Soil Contamination Area South of the Turntable and the PM-2A Tanks. Revegetation of the backfilled excavations will encourage drainage without erosion. (Specification 02140, Appendix B, "Temporary Diversion & Control of Water During Construction").

3.7 Erosion Protection

The backfilled excavations will be vegetated in accordance with the *Guidance for Revegetation of Disturbed Areas at the Idaho National Engineering Laboratory* (DOE-ID 1989). All backfilled excavations will be sloped above grade to divert surface water and minimize erosion.

3.8 Construction

A construction laydown and stockpile area will be necessary at each site to stage equipment and materials close to the work. The staging areas will be located so that noncontaminated materials and equipment operate in work areas isolated from contaminated material and equipment. A temporary decontamination area for personnel and equipment decontamination will be established at the control point for each area in accordance with the decontamination requirements of the project HASP. Spill prevention and control will be maintained for the staging areas.

3.9 Operation and Maintenance

Details of the O&M for the Soil Contamination Area South of the Turntable (TSF-06, Area B) PM-2A Tanks (TSF-26) are found in the OU 1-10 O&M plan (DOE-ID 2001b).

4. HUMAN HEALTH AND ENVIRONMENTAL COMPLIANCE

4.1 Remedial Action Objectives

The RAOs for OU 1-10 were developed in accordance with the National Contingency Plan and are based on the results of the human health risk assessment. The RAOs are based on the results of the human health risk assessment and are specific to the COCs and exposure pathways developed for OU 1-10 (see Table 4-1). As outlined in the OU 1-10 ROD (DOE-ID 1999), the RAOs for TSF-06 Area B, TSF-26, TSF-07, and WRRTF-13 are:

- Reduce risk from external radiation exposure from Cs-137 to a total excess cancer risk of less than 1 in 10,000 for the hypothetical resident 100 years in the future and the current and future worker

- Prevent exposure to petroleum hydrocarbon constituents in accordance with the State of Idaho RBCA Guidance.

To meet these objectives, FRGs were established. These goals are quantitative cleanup levels based primarily on ARARs and risk-based doses. These FRGs will be used in the remedial actions as described in this work plan.

4.2 Applicable or Relevant and Appropriate Requirements

Under CERCLA Section 121, response actions conducted entirely onsite are exempt from obtaining federal, state, or local permits. However, these actions must comply with the substantive aspects of the ARARs specified for the site. Tables 4-2 through 4-5 summarize how the substantive requirements of the ARARs and the to-be-considered requirements for the Soil Contamination Area South of the Turntable (Table 4-2), Disposal Pond (Table 4-3), PM-2A Tanks (Table 4-4), and Fuel Leak site (Table 4-5) have been addressed by the remedial design or will be addressed during the remedial action.

Table 4-1. Summary of RAOs to OU 1-10 Group 1 Sites.

Remedial Action Objective	TSF-06, Area B Soil Contamination Area	TSF-07, Disposal Pond	TSF-26, PM-2A Tanks Site	WRRTF-13 Fuel Leak
Reduce risk from external radiation exposure from Cs-137.	Exposure to penetrating radiation prevented by removing radionuclide contamination from the site.	Exposure to penetrating radiation will be prevented by limiting access to the contamination from the site.	Exposure to penetrating radiation will be prevented by removing radionuclide site	N/A
Prevent exposure to petroleum hydrocarbon constituents in accordance with RBCA.	N/A	N/A	N/A	Potential for exposure eliminated by removal of soils exceeding RBCA cleanup levels.

Table 4-2. Compliance with ARARs for the Soil Contamination Area South of the Turntable (TSF-06, Area B).

ARAR/TBC	Substantive Requirement(s)	Reason	Relevancy (A or R&A)[a]	Compliance Strategy
Rules for the Control of Air Pollution in Idaho	"Toxic Substances" IDAPA 16.01.01.161 "Toxic Air Emissions" IDAPA 16.01.01.585 and .586 "Fugitive Dust" IDAPA 16.01.650 and .651	The release of carcinogenic and noncarcinogenic contaminants into the air must be estimated before start of construction, controlled if necessary, and monitored during excavation and sorting of soil. Requires control of dust during excavation, sorting, and removal of the soils.	A	Based on past sampling of the PM-2A Tanks site (source of contamination for the TSF-06, Area B site) no toxic substances as addressed in Appendix D. Dust suppression measures will be implemented as necessary during the remedial action to minimize the generation of fugitive dust. These measures may include water sprays, keeping vehicle speeds to a minimum, and work controls during periods of high wind.
	"Requirements for Portable Equipment" IDAPA 16.01.01.500.02	Portable equipment for sorting and removal of the soils, and any portable support equipment, must be operated to meet state and federal air emissions rules.	A	The use of any portable equipment will comply with IDAPA 16.01.01.500.02.
NESHAPs	"Radionuclide Emissions from DOE Facilities" 40 CFR 61.92 "Emission Monitoring" 40 CFR 61.93 "Emission Compliance" 40 CFR 61.94(a)	Limits exposure of radioactive contamination release to 10 mrem/yr for the offsite receptor, and establishes monitoring and compliance requirements.	A	Radionuclide emission calculations and air modeling for this project are presented in Appendix D. The model result is estimated at 4.4E-04 mrem/yr dose at the site boundary. Therefore, monitoring will not be required.

Table 4-2. (continued).

ARAR/TBC	Substantive Requirement(s)	Reason	Relevancy (A or R&A)[a]	Compliance Strategy
RCRA – Standards Applicable to Generators of Hazardous Waste	"Hazardous Waste Determination" IDAPA 16.01.05.006 (40 CFR 262.11)	A HWD is required for the soils and any secondary waste generated during remediation.	A	A hazardous waste determination per MCPs will be completed. The INEEL WDDF will satisfy requirements of 40 CFR 262.11.
	"Manifest"[b] IDAPA 16.01.05.006 (40 CFR 262. Subpart B)	Establishes requirements for transporting hazardous waste to a treatment and/or disposal site. Applies to any soils and secondary waste considered RCRA hazardous.	A	A manifest will be used to ship hazardous waste out of the TAN/TSF
	"Pre-Transportation Requirements"[b] IDAPA 16.01.05.006 (40 CFR 262.30–262.33			
RCRA – Standards for Owners and Operators of Hazardous Waste Treatment Storage and Disposal Units	"General Waste Analysis"[b] IDAPA 16.01.05.008 (40 CFR 264.13[a][1-3])	Analysis requirements apply only to RCRA hazardous soils and secondary waste generated during remediation.	A	Samples will be obtained to determine whether any waste material generated meets the acceptance criteria at the disposal facility.
	"Security of Site"[b]IDAPA 16.01.05.008 (40 CFR 264.14)	If the soil site is determined to be RCRA hazardous, measures must be taken to restrict access to the site during removal of	A	INEEL and WAG I security measures, such as access restrictions, will be implemented during remediation activities. Danger and warning signs will be posted.
	"General Inspections"[B] IDAPA 16.01.05.008 (40 CFR 264.16)	If the soil site is determined to be RCRA hazardous, regular inspections must be performed during remediation.	A	Routine inspections will be conducted during and following remediation. The information obtained will be incorporated into the annual institutional control monitoring report. Additionally, post-remediation inspections will be conducted as part of O&M activities.

Table 4-2. (continued).

ARAR/TBC	Substantive Requirement(s)	Reason	Relevancy (A or R&A)[a]	Compliance Strategy
	"Personnel Training"[b] IDAPA 16.01.05.008 (40 CFR 264.16)	If the soil site is determined to be RCRA hazardous, all personnel involved in soil excavation and sorting must be trained.	A	Personnel will be trained in hazardous waste management requirements.
	"Preparedness and Prevention"[b] ISAPA 16.01.05.008 (40 CFR 264 Subpart C)	Applies to soil excavation and decontamination	A	Emergency equipment will be available when handling/managing hazardous waste.
	"Contingency Plan and Emergency Procedures"[b] IDAPA 16.01.05.008 (40 CFR 264 Subpart D)	Applies to soil excavation and decontamination activities if the soil site is determined to be RCRA hazardous.	A	The substantive requirements of a contingency plan will be maintained.
	"Equipment Decontamination"[b] IDAPA 16.01.05.008 (40 CFR 264.114)	All equipment used during remediation must be decontaminated if RCRA hazardous waste is contacted.	A	Equipment will be decontaminated to remove hazardous waste.
	"Use and Management of Containers"[b] IDAPA 16.01.05.008 (40 CFR 264.171–177)	Applicable to RCRA hazardous soils and associated hazardous secondary waste generated remediation that is managed in containers.	A	Only containers that are compatible with the waste generated will be used. Containers will be inspected routinely.
RCRA – Land Disposal Restrictions	"Land Disposal Restriction Treatment Standards" IDAPA 16.01.05.011[b] (40 CFR 268.40)	Any secondary waste generated that is considered RCRA hazardous must be treated if necessary to meet land disposal restriction criteria before disposal.	A	The RD/RA waste management plan for OU 1-10 WAG 1 addresses compliance strategy. Sampling will be conducted per FSP. Any soil that falls within RCRA compliance that does not comply with land disposal restrictions will have to be treated prior to disposal.

Table 4-2. (continued).

ARAR/TBC	Substantive Requirement(s)	Reason	Relevancy (A or R&A)[a]	Compliance Strategy
	"Treatment Standards for Hazardous Debris"[b] IDAPA 16.01.05.011 (40 CFR 268.45[a][b][c][d])		A	The RDRA waste management plan for OU 1-10 WAG 1 addresses compliance strategy. Sampling will be conducted per FSP. Any soil that falls within RCRA compliance that does not comply with land disposal restrictions will have to be treated prior to disposal.
	"Universal Treatment Standards"[b] IDAPA 16.01.05.011 (40 CFR 268.48[a])		A	The RD/RA waste management plan for OU 1-10 WAG 1 addresses compliance strategy. Sampling will be conducted per FSP. Any soil that falls within RCRA compliance that does not comply with land disposal restrictions will have to be treated prior to disposal.
	"Alternative Treatment Standards for Contaminated Soils"[b] IDAPA 16.01.05.011 (40 CFR 268.49)	Any excavated soils considered RCRA hazardous must meet the land disposal restriction standards for contaminated soil before disposal in an approved facility on the INEEL or off the INEEL.	A	The RD/RA waste management plan for OU 1-10 WAG 1 addresses compliance strategy. Sampling will be conducted per FSP. Any soil that falls within RCRA compliance that does not comply with land disposal restrictions will have to be treated prior to disposal.
	"CERCLA Off-Site Policy"[b] (40 CFR 300.440)		A	Any offsite TSD receiving hazardous waste will be certified to have offsite authority.

Table 4-2. (continued).

ARAR/TBC	Substantive Requirement(s)	Reason	Relevancy (A or R&A)[a]	Compliance Strategy
To be Considered				
Radiation Protection of the Public and the Environment	DOE Order 5400.5 Chapter II (2)(a,b)	The DOE Order limits the effective dose to the public from exposure to radiation sources and airborne releases.		Job safety analyses and/or radiological work permits will be prepared for tasks where there is the potential for exposures to radioactive contamination/materials. Radiological work permits will be used only as determined by the radiological control technician, based on the INEEL *Radiological Control Manual* (PRD-183).
Institutional Controls	Region 10 Final Policy on the Use of Institutional Controls at Federal Facilities	Applies to contamination left in place or remaining above 1E-04 risk.		An institutional control plan will be developed after the submittal of the institutional controls status monitoring report is required on an annual basis.

a. A = Applicable, R&A = Relevant and Appropriate
b. This ARAR will not be applicable if a no-longer-contained-in determination is approved by IDEQ for the site.
NESHAPs = National Emission Standards for Hazardous Air Pollutants
IDAPA – Idaho Administrative Procedures Act.

Table 4-3. Compliance with ARARs for the Disposal Pond (TSF-07).

ARAR/TBC	Substantive Requirement(s)	Reason	Relevancy (A or R&A)[a]	Compliance Strategy
Chemical-Specific ARARs				
NESHAPs	"Radionuclide Emissions from DOE Facilities: (40 CFR 61.92)	Limits exposure of radioactive contamination release to 10 mrem/yr for the offsite receptor, and establishes monitoring and compliance requirements.	A	The radiation work permit will define requirements for monitoring to ensure that the spread of contamination does not occur. No construction or excavation activities will take place within the contaminated area.
	"Emissions Monitoring" (40 CFR 61.93)		A	The radiation work permit for this site will address the requirements necessary to ensure that the spread of contamination does not occur.
	"Emissions Compliance" (40 CFR 61.94(a))		A	
RCRA – Standards Applicable to Generators of Hazardous Waste	"Hazardous Waste Determination: IDAPA 16.01.05.006 (40 CFR 262.11)	A HWD will be required for samples taken to obtain a no-longer-contained-in determination.	A	A HWD per MCPs will be completed. The INEEL WDDF will satisfy requirements of 40 CFR 262.11.
RCRA – Standards for Owners and Operators of Hazardous Waste Treatment Storage and Disposal Units	"Security of Site"[b] IDAPA 16.01.05.008 (40 CFR 264.14)	Measures must be taken to restrict access to the site for as long as direct exposure to hazardous contamination is possible.	R&A	INEEL and WAG 1 security measures, such as access restrictions, will be implemented.
	"General Inspections"[b] IDAPA 16.01.05.008 (40 CFR 264.15)	Regular inspections of the site are required for as long as direct exposure to hazardous contaminants is possible.	R&A	Inspections will be conducted during and following remediation. The information obtained will be incorporated into the annual institutional control monitoring report. Additionally, post-remediation inspections will be conducted as part of O&M activities.

Table 4-3. (continued).

ARAR/TBC	Substantive Requirement(s)	Reason	Relevancy (A or R&A)[a]	Compliance Strategy
To be Considered				
Radioactive Waste Management	DOE Order 435.1	The DOE Order provides guidance on disposal of low-level radioactive waste at DOE facilities.		Radiological personal protective equipment and decontamination water will be managed in accordance with the INEEL. Reusable Property, Recyclable Materials and Waste Acceptance Criteria, and the INEEL *Radiological Control Manual*. Decontamination water may be discharged to the area of contamination with the approval of the radiological control technicians and environmental restoration project manager. Sampling and field screening efforts to identify radionuclide-contaminated soils above action limits will minimize waste material/handling.
Radiation Protection of the Public and Environment	DOE Order 5400.5 Chapter II (1)(a,b)	The DOE Order limits the effective dose to the public from exposure to radiation sources and airborne release.		Job safety analyses and/or radiological work permits will be prepared for tasks where there is the potential for exposures to radioactive contamination/materials. Radiological work permits will only be used as determined by the radiological controls technician, based on the INEEL *Radiological Control Manual* (PRD-183).

Table 4-3. (continued).

ARAR/TBC	Substantive Requirement(s)	Reason	Relevancy (A or R&A)[a]	Compliance Strategy
Institutional Controls	Region 10 Final Policy on the Use of Institutional Controls at Federal Facilities	Applies to contamination left in place or remaining above 1E-04 risk.		An institutional control plan will be developed after the submittal of the institutional controls status monitoring report. An institutional control monitoring report is required on an annual basis.

a. A = Applicable, R&A = Relevant and Appropriate
b. This ARAR will not be applicable if a no-longer-contained-in determination is approved by IDEQ for the site.
NESHAPs = National Emission Standards for Hazardous Air Pollutants
IDAPA – Idaho Administrative Procedures Act.

Table 4-4. ARARs for the PM-2A Tanks (TSF-26) selected remedy.

ARAR/TBC	Substantive Requirement(s)	Reason	Relevancy (A or R&A)[a]	Compliance Strategy
Chemical-Specific ARARs				
Rules for the Control of Air Pollution in Idaho	"Toxic Substances: IDAPA 16.01.01.161 "Toxic Air Emissions" IDAPA 16.01.01.585 and .586	The release of carcinogenic and noncarcinogenic contaminants into the air must be estimated before start of construction, controlled (if necessary), and monitored during soil excavation, waste removal, treatment (if performed), and tank decontamination.	A	Based on past sampling of the PM-2A Tanks site (source of contamination for the TSF-06, Area B site) no toxic substances were detected. Therefore, air modeling was not conducted for toxic substances as addressed in Appendix D.
NESHAPs	"Radionuclide Emissions from DOE Facilities" 40 CFR 61.92 "Emission Monitoring"40 CFR 61.93 "Emission Compliance:40 CFR 61.94(a)	Limits exposure of radioactive contamination release to 10 mrem/yr for the off-Site receptor, and establishes monitoring and compliance requirements.	A	Radionuclide emission calculations and air modeling for this project are presented in Appendix D. The model resulted is estimated at 5.3E-03 mrem/yr dose at the site boundary. Therefore, monitoring is not required.
Action-Specific ARARs				
Rules for the Control of Air Pollution in Idaho	"Fugitive Dust" IDAPA 16.01.01.650 and .651	Requires control of dust during excavation and removal of waste from the tanks	A	Dust suppression measures will be implemented as necessary during the remedial action to minimize the generation of fugitive dust. These measures may include water sprays, keeping vehicle speeds to a minimum, and work controls during periods of high winds.

Table 4-4. (continued).

ARAR/TBC	Substantive Requirement(s)	Reason	Relevancy (A or R&A)[a]	Compliance Strategy
Requirements for Portable Equipment	IDAPA 16.01.01.500.02	Portable equipment for waste removal and treatment, if performed on-Site, and any portable support equipment must be operated to meet state and federal air emissions rules.	A	The use of any portable equipment will comply with IDAPA 16.01.01.500.02.
RCRA – Standards Applicable to Generators of Hazardous Waste	"Hazardous Waste Determination" IDA 16.01.05.006 (40 CFR 262.11)	A HWD is required for soils excavated for disposal, waste from the tanks, and any secondary waste generated during remediation.	A	A HWD per MCPs will be completed. The INEEL WDDF will satisfy requirements of 40 CFR 262.11.
	"Manifest"[b] IDAPA 16.01.05.006 (40 CFR 262 Subpart B)	Establishes requirements for transporting hazardous waste to treatment and/or disposal site.	A	A manifest will be used to ship hazardous waste out of the TAN/TSF.
	"Pre-Transportation Requirements"[b] IDAPA 16.01.05.006 (40 CFR 262.30–262,330			
RCRA – Standards for Owners and Operators of Hazardous Waste Treatment Storage and Disposal Units	"General Waste Analysis"[b] IDAPA 16.01.05.008 (40 CFR 264.13 (a)(1-3))	Analysis requirements apply to soils excavated for disposal, waste removed from tanks, and secondary waste generated during remediation.	A	Samples will be obtained to determine whether any waste material generated needs the acceptance criteria at the disposal facility.
	"Security of Site"[b] IDAPA 16.01.05.008 (40 CFR 264.14)	Measures must be taken to restrict access to the site during waste removal and treatment, if performed, tank decontamination, and tank closure.	A	INEEL and WAG 1 security measures, such as access restrictions, will be implemented during remediation activities. Danger and warning signs will be posted.

Table 4-4. (continued).

ARAR/TBC	Substantive Requirement(s)	Reason	Relevancy (A or R&A)[a]	Compliance Strategy
RCRA – Standards for Owners and Operators (continued)	"General Inspections"[b] IDAPA 16.01.05.008 (40 CFR 264.15)	Regular inspections must be performed during remediation.	A	Routine inspections will be conducted during and following remediation. The information obtained will be incorporated into the annual institutional control monitoring report. Additionally, post-remediation inspections will be conducted as part of operations and maintenance activities.
	"Personnel Training"[b] IDAPA 16.01.05.008 (40 CFR 264.16)	All personnel must be trained who are involved in soil excavation, waste removal and treatment, if performed, decontamination, and tank closure.	A	Personnel will be trained in hazardous waste management requirements.
	"Preparedness and Prevention"[b] IDAPA 16.01.05.008 (40 CFR 264 Subpart C)	Applies to soil excavation, waste removal, and treatment, if performed, and decontamination activities.	A	Emergency equipment will be available when handling/managing hazardous waste.
	"Contingency Plan and Emergency Procedures"[b] IDAPA 16.01.05.008 (40 CFR 264 Subpart D)	Applies to soil excavation, waste removal and treatment, if performed, and decontamination activities.	A	The substantive requirements of a contingency plan will be maintained.
	"Equipment Decontamination"[b] IDAPA 16.01.05.008 (40 CFR 264.114)	All equipment used during remediation must be decontaminated if hazardous waste is contacted.	A	Equipment will be decontaminated to remove hazardous waste.
	"Use and Management of Containers"[b] IDAPA 16.01.05.008 (40 CFR 264.171–177)	Applicable to soils, tank waste, and any secondary hazardous-waste-generated remediation, which is managed in containers.	A	Only containers that are compatible with the waste generated will be used. Containers will be inspected routinely.

Table 4-4. (continued).

ARAR/TBC	Substantive Requirement(s)	Reason	Relevancy (A or R&A)[a]	Compliance Strategy
	"Tank Closure and Post-Closure Care"[c] IDAPA 16.01.05.008 (40 CFR 264.197(a))	All waste and contaminated soils must be removed and all tank structures to be left in the ground must be decontaminated.	A	N/A
	"Miscellaneous Units (only if treatment is required to meet Land Disposal Restrictions)"[b] IDAPA 16.01.05.008. (40 CFR Subpart X [except 264.603])	Requirements for an on-Site treatment system for the tank waste, if required.	A	INEEL and WAG 1 security measures, such as access restrictions, will be implemented during remediation activities.
RCRA – Land Disposal Restrictions	"Land Disposal Restrictions Treatment Standards"[b] IDAPA 16.01.05.011 (40 CFR 268.40(a)(b)(e))	The waste, tank, and piping must be treated, if necessary, to meet land disposal restriction criteria before disposal.	A	The RCRA waste management plan for WAG 1 OU 1-10 addresses the compliance strategy. Sampling will be conducted in accordance with the FSP. Any soil that falls within RCRA compliance that does not comply with land disposal restrictions will have to be treated prior to disposal.
	"Treatment Standards for Hazardous Debris"[b] IDAPA 16.01.05.011 (40 CFR 268.48(a))		A	The RCRA waste management plan for WAG 1 OU 1-10 addresses the compliance strategy. Sampling will be conducted in accordance with the FSP. Any soil that falls within RCRA compliance that does not comply with land disposal restrictions will have to be treated prior to disposal.
	"Universal Treatment Standards"[b] IDAPA 16.01.05.011 (40 CFR 268.48(a))		A	The RCRA waste management plan for WAG 1 OU 1-10 addresses the compliance strategy. Sampling will be conducted in accordance with the FSP. Any soil that falls within RCRA compliance that does not comply with land disposal restrictions will have to be treated prior to disposal.

Table 4-4. (continued).

ARAR/TBC	Substantive Requirement(s)	Reason	Relevancy (A or R&A)[a]	Compliance Strategy
	"Alternative Treatment Standards for Contaminated Soil" IDAPA 16.01.05.011 (40 CFR 268.49)	Applies to any contaminated soil that is to be removed from the PM-2A Tanks for disposal at an approved facility on the INEEL or off the INEEL	A	The RCRA waste management plan for WAG 1 OU 1-10 addresses the compliance strategy. Sampling will be conducted in accordance with the FSP. Any soil that falls within RCRA compliance that does not comply with land disposal restrictions will have to be treated prior to disposal.
	"CERCLA Off-Site Policy"[b] (40 CFR 300.440)		A	Any offsite TSP receiving hazardous waste will be certified to have offsite authority.
To-Be-Considered				
Radiation Protection of the Public and the Environment	DOE Order 5400.5 Chapter II (1)(a,b)	Order that limits the effective dose to the public from exposure to radiation sources and airborne releases.		Job safety analyses and/or radiological work permits will be prepared for tasks where there is the potential for exposures to radioactive contamination/materials. Radiation work permits will be used only as determined by the radiological controls technician, based on the INEEL *Radiological Control Manual* (PRD-183).
Institutional Controls	Region 10 Final Policy on the Use of Institutional Controls at Federal Facilities	Applies to contamination left in place or remaining above 1E-04 risk.		An institutional control plan will be developed after the submittal of institutional controls status monitoring report. An institutional control monitoring report is required on an annual basis.

a. A = Applicable, R&A = Relevant and Appropriate
b. This ARAR will not be applicable if a no-longer contained-in determination is approved by IDEQ for the site.
c. The compliance strategy for the ARAR will be addressed in the OU 1-10 Group 2 and 3 RD/RAWP.
NESHAPs = National Emission Standards for Hazardous Air Pollutants
IDAPA – Idaho Administrative Procedures Act.

Table 4-5. Compliance with ARARs for the Fuel Leak site (WRRTF-13).

ARAR/TBC	Substantive Requirement(s)	Reason	Relevancy (A or R&A)[a]	Compliance Strategy
Chemical-Specific ARARs				
Rules for the Control of Air Pollution in Idaho	"Toxic Substances: IDAPA 16.01.01.161 "Demonstration of Preconstruction Compliance with Toxic Standards" IDAPA 16.01.01.210 "Toxic Air Emissions" IDAPA 16.01.01.585 and .586	The release of carcinogenic and noncarcinogenic contaminants into the air must be estimated before start of excavation, controlled, if necessary, and monitored during remediation	A	Estimates of emissions during remediation will be generated by results of prior soil sampling. If emission levels exceed allowable limits, appropriate controls and monitoring will be implemented.
Idaho Groundwater Quality Rule (Primary Drinking Water Standards)	IDAPA 16.01.11.200 (40 CFR 141)	Any contamination remaining at the site after remediation must not adversely affect groundwater quality; groundwater quality standards must be met	A	The levels of contamination remaining in the bottom of excavation will dictate the requirements for groundwater monitoring.
Petroleum Release Risk-Based Corrective Action	IDAPA 16.01.02.852	After additional sampling, an analysis based on the Idaho RBCA criteria will be performed to determine the cleanup criteria for the petroleum-contaminated soils.	A	Data may be used to perform a risk assessment to determine if the need for groundwater monitoring is necessary, and, if so, the constituents to be monitored.
RCRA – Identification and Listing of Hazardous Waste	"Exclusions" IDAPA 16.01.05.005 40 CFR 261.4(b)(10))	Any excavated soils that fail the toxicity characteristic leaching procedure for organics (D018-D043) will not be considered hazardous waste.	R&A	Any excavated soil that fails the TCLP for organics (D018-D043) is excluded from RCRA requirements and is subject to the requirements of 40 CFR 280 (see 40 CFR 261.4 (b)10)(see Appendix D Hazardous Waste Determination).

Table 4-5. (continued).

ARAR/TBC	Substantive Requirement(s)	Reason	Relevancy (A or R&A)[a]	Compliance Strategy
Action-Specific ARARs				
Rules for the Control of Air Pollution in Idaho	"Fugitive Dust" IDAPA 16.01.01.650 and .651	Requires control of dust generated during excavation and transport of soil.	A	Dust suppression measures will be implemented as necessary during the remedial action. These measures may include water sprays, keeping vehicle speeds to a minimum, and work controls during periods of high wind.
RCRA – Standards Applicable to Generators of Hazardous Waste	"Hazardous Waste Determination" IDAPA 16.01.05.006 (40 CFR 262.11)	A HWD must be made for any waste generated during excavation	A	A hazardous waste determination per MCPs will be completed. The INEEL WDDF will satisfy requirements of 40 CFR 262.11.
To-Be-Considered				
Institutional Controls	Region 10 Final Policy on the Use of Institutional Controls at Federal Facilties	Applies to contamination left in place or remaining above 1E-04 risk.		An institutional control plan will be developed after the submittal of institutional controls status monitoring report. An institutional controls monitoring report is required on an annual basis.

a. A = Applicable, R&A = Relevant and Appropriate.

NESHAPs = National Emission Standards for Hazardous Air Pollutants.

IDAPA – Idaho Administrative Procedures Act.

5. REMEDIAL ACTION WORK PLAN

Implementation of the remedial design, remedial action work tasks, and supporting documents will be completed as described in the following sections.

5.1 Implementation of the Remedial Design

5.1.1 Relevant Changes to the Scope of Work

Based on post-ROD sampling at WRRTF-13, and a Tier 2 State of Idaho RBCA evaluation, no remedial action is required at WRRTF-13 as identified in Sections 1.2.4 and 1.3.1.4 and presented in detail in Appendix F.

The construction completion report, as discussed in the scope of work, has been renamed the final inspection report to be more consistent with the FFA/CO and RD/RA guidance terminology.

5.1.2 Subcontracting Plan

The work contained in this work plan is primarily earthwork and includes an evaluation for excavating, hauling, and placement of borrow materials to the project site. The specific tasks that will be performed to complete this work are described in Section 5.2.

The work, in total or in part, may be competitively bid and a contract awarded to the company providing best value to the project. The bid process will include the request for proposal (RFP), prebid conference, private or public bid opening, bid evaluation, notice of award, notice to proceed, and preconstruction conference.

5.1.3 Field Oversight/Construction Management

The DOE-ID remediation project manager will be responsible for notifying the EPA and the IDEQ of project activities. The project manager will also serve as the single interface point for all routine contact between the Agencies, the INEEL M&O contractor, and the subcontractor.

The INEEL M&O contractor will provide field oversight and construction management services for this project. The INEEL M&O contractor will also provide field support services for health and safety, environmental, quality assurance, and landlord services. An organization chart and position description is provided in the project HASP (INEEL 2000a).

5.1.3.1 Protocol and Coordination of Field Oversight. The DOE will notify the EPA and IDEQ WAG managers of pending remedial action activities, such as project startup, close-out and inspections. Activities related to preliminary inspections, the prefinal inspection, and the final inspection are covered in Section 5.3. In accordance with the FFA/CO, a minimum 14 calendar-days notification will be provided prior to prefinal inspection activities.

Visitors to the site who wish to observe activities must meet badging and training requirements necessary to enter INEEL facilities. Training requirements for visitors are described in the project HASP INEEL 2000a).

5.1.4 Project Cost Estimate

The cost estimates for the three projects addressed by this work plan are presented in Appendix E, Cost Estimate Support Data Tables. The costs will be revised during each submittal of this document to reflect the most current estimate based on comments to the design and other data.

5.1.5 Project Schedule

The OU 1-10 remedial action working schedule (Figure 5-1) with the associated data identified in Table 5-1 covers all project tasks from the project Scope of Work (DOE-ID 2000b) through completion of the final inspection report. Administrative and document preparation activities are based on an 8-hour day, 5-day workweek, while field activities are based on a 10-hour day, 4-day workweek. The schedule does not include any contingency for delay to the schedule due to late or slow document reviews or for field activities experiencing loss of productivity due to adverse weather conditions.

5.1.6 Post-ROD Sampling

Post-ROD sampling was conducted at the Soil Contamination Area South of the Turntable (TSF-06, Area B), the PM-2A Tanks (TSF-26), and Fuel Leak site (WRRTF-13), prior to the start of any remedial actions. Analytical results will be used to prepare no-longer-contained-in determinations, support hazardous waste determinations, and determine the FRG for the Fuel Leak site. Post-ROD sampling will also be used to determine the final estimation of the depth and areal extent of excavation, and volume of contaminated soil to be removed. Details of post-ROD sampling are in Section 2.9 of this document.

5.2 Remedial Actions Work Tasks

The remedial action work tasks identify the activities that will be performed by a subcontractor to complete the project. It provides a brief task description of the subcontractor's work, plus subcontractor/contractor interfaces. Additional detail is provided in the construction drawings, technical specifications, and the RFP. The work described below may be performed by INEEL labor, issued as a single subcontract, or as several individual subcontracts. The subcontractor may subcontract portions of the work for a more efficient completion of the project.

5.2.1 Premobilization

The subcontractor will submit all required submittals, work plans, bonds, and insurance, and ensure that all necessary training and medical examinations are complete as per the HASP (INEEL 2000a). Specific submittals, required training, and current medical information required by the HASP will be provided in the RFP, and must be completed before the subcontractor is allowed to mobilize. These submittals will show and/or certify that the subcontractor can meet and satisfy the requirements of the RFP and the project design.

5.2.2 Mobilization

Mobilization describes work that must be done by the subcontractor in preparation for construction operations. This work is generally the implementation of the required administrative, engineering, and health and safety controls, such as:

- Fences, signs, and postings
- Identification and demarcation of work areas
- Delivery and storage of material and equipment
- Set-up of the subcontractor site offices.

Table 5-1. Working schedule and enforceable dates for the OU 1-10 Group 1 remedial action.

Activity	Planned Start Date	Planned Completion Date	Enforceable Completion Date
Remedial Design			
Submittal of Draft RD/RA Work Plan to Agencies	5/4/2000	5/4/2000	7/3/2000[b]
Agencies Review of Draft RD/RA Work Plan	5/5/2000	6/19/2000	[b]
Prepare Draft Final RD/RA Work Plan	6/20/2000	8/2/2000	[b]
Agencies Review of Draft Final RD/RA Work Plan	8/3/2000	8/18/2000	[b]
Final RD/RA Work Plan	8/21/2000	9/5/2000	[b]
RD/RA Work Plan Finalized	9/6/2000	9/6/2000	[b]
Post-ROD Sampling			
Begin Post-ROD Sampling to Start Continuous Remedial Activities	2/21/2000		10/31/2000[a]
Submittal of Post-ROD Sampling Limitation and Validation Reports to Agencies		[c]	
Remedial Action			
TSF-06 Native Soil Field Work	6/1/2001	8/31/2001	
TSF-06 Prefinal Inspection	9/4/2001	9/7/2001	
Submit TSF-06 Prefinal Inspection Report		9/28/2001	
INEEL CERCLA Disposal Facility Opens		2/27/2004	
TSF-26 Soil Field Work	6/1/2004	9/30/2004	
Complete Disposal of Surface Soils Generated During Remedial Actions at TSF-06 and TSF-26 (PM-2A).		October 2004	February 2005[a]
TSF-26 Prefinal Inspection	10/1/2004	10/7/2004	
Submit TSF-26 Prefinal Inspection Report		10/29/2004	
Group 1 Final Inspection	11/15/2004	11/22/2004	
Submit Group 1 Final Inspection Report		2/14/2005	
Agency Review of Group 1 Final Inspection Report	2/15/2005	3/15/2005	
Group 1 Final Inspection Report Finalized		4/15/2005	
Five-Year Review		[d]	[d]

a. Working schedule and enforceable dates are from the OU 1-10 Remedial Design/Remedial Action Scope of Work (DOE-ID 2000b)
b. Review periods consistent with Section 8.13 of the FFA/CO (DOE-ID 1991).
c. Limitation and validation reports will be submitted with the FFA/CO (DOE-ID 1991) required 120 days.
d. The first five-year review is planned for 2005. Specific dates will be determined by the Agencies in the future.

5.2.3 Borrow, Haul, and Stockpile

Native soil material will be used as backfill for this project. All INEEL native soil borrow sources have been previously determined to be free of contamination.

Borrow operations will be performed in accordance with the project Specifications 02200 (Appendix B) and an approved INEEL Form 1595. The subcontractor will set up an operation at the borrow area to: (1) gather and stockpile the material in preparation for hauling it to the project site, and (2) move the material from the borrow source to the project site where it will be placed.

Equipment used for the hauling and stockpiling operations will remain outside of radiation work areas. The work will require the services of heavy earthwork equipment such as scrapers, dozers, loaders, and large dump trucks, and will require up-front planning and coordination with other site operations and personnel to ensure safe and productive hauling across facility roads. The project specifications (Appendix B) identify the subcontractor as having responsibility for maintaining the site haul roads during operations and for returning the haul roads to their original conditions. The RFP will require that the subcontractor prepare a traffic management plan, including documentation of the condition of the haul roads prior to startup of operations.

5.2.4 Storm Water Management and Sediment Control

The project specifications, Specification #02140, Temporary Diversion & Control of Water During Construction (Appendix B), developed for the project that governs the subcontractor, do not require that a storm water pollution prevention plan be developed for this project.

The specifications require that the subcontractor control surface water prior to and throughout the construction operations. Control measures implemented may include berms, swales, ditches, temporary pipes, portable pumps, silt fences, sediment traps, and any other measures approved by the contractor.

5.2.5 Clearing and Grubbing

The subcontractor will clear the sites of shrubs, vegetation, fences, and other debris, as identified in the construction specifications. Disturbance of underlying soils will be minimized during all clearing and grubbing activities, which will be performed in accordance with Specification 02110 and presented in Appendix B of this document.

The subcontractor will remove all existing fences, stakes, gates, and signs from the Soil Contamination Area South of the Turntable, Disposal Pond, PM-2A Tanks, and the Fuel Leak site. The debris and signs from the TSF-06 Area B, TSF-07, and TSF-26 sites will be surveyed by radiological control technicians, decontaminated as necessary, and released for disposal in the Central Facilities Area Landfill, if possible. If decontamination cannot be performed, the waste will be managed accordingly. Debris removed from the WRRTF-13 site, if any, will be disposed with excavated contaminated soil.

5.2.6 Construction Activities

The subcontractor will confine construction operations to within the areas that require barrier construction or to areas directed by the contractor. Any areas outside the designated areas that are damaged or disturbed by the subcontractor's operations will be repaired and seeded by the subcontractor in accordance with Specification 02930, Reclamation Seeding and Mulching, provided in Appendix B of this document.

5.2.7 Security and Inspections

The project will provide for security and inspection procedures during all remedial activities to ensure that unauthorized personnel are not allowed access to the site, and that site conditions are controlled at all times.

5.2.8 Soil Excavation

Contaminated soils will be excavated to the extent shown on the design drawings in Appendix A. All excavation activities will be performed in accordance with Specification 02222, Appendix B, of this document.

Precautions such as water spray, wind monitoring, and visual observation will be used to prevent the generation of fugitive dust. Air monitoring requirements will be specified by a radiation control engineer and a certified industrial hygienist. This will be based on monitoring and on the evaluation of the effectiveness of the dust suppression measures to control the spread of contamination through fugitive dust. Personal protective equipment, when required, will be used as specified in the HASP (INEEL 2000a), and as determined by the safety officer and/or the certified industrial hygienist present at the job site. Equipment necessary for excavation of the contaminated soils will remain within the contamination control zones until completion of excavation activities. Equipment that will be used to haul excavated soil from the area will not be driven onto contaminated areas in order to minimize the spread of contamination and to obviate the need to perform any additional decontamination.

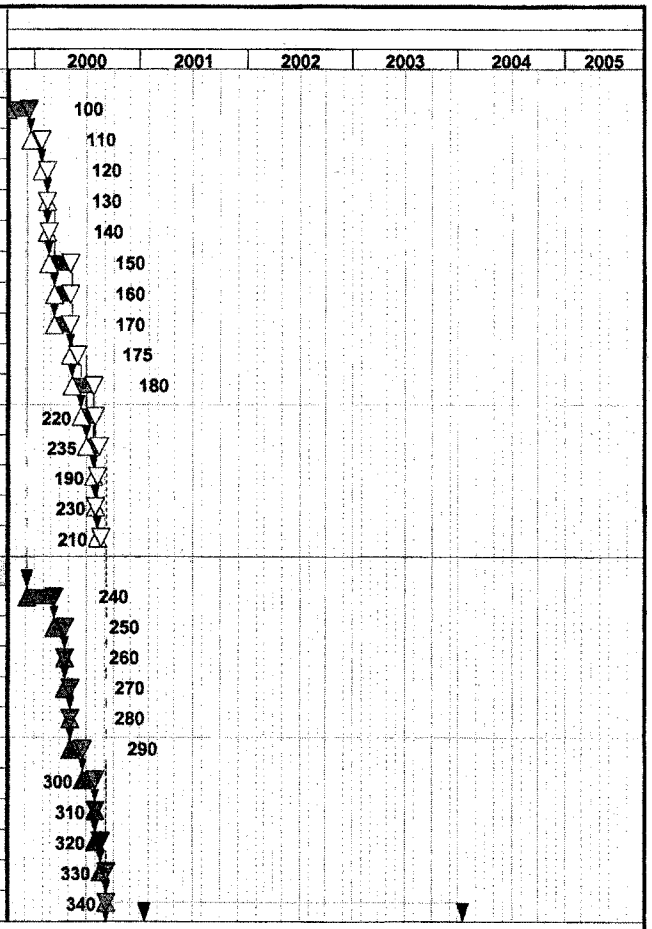
5.2.9 Waste Management

The remedial actions planned at Test Area North under the OU I-10 Record of Decision and this RD/RAWP will generate secondary waste, including industrial, low-level, and mixed waste. These waste streams will be managed within the CERCLA Area of Contamination (AOC) associated with the corresponding remedial actions. The AOC for TSF-06 and TSF-26 sites for waste management purposes is shown in Figure 5-2.

All waste streams generated as a result of the remedial action will be managed in accordance with the Waste Management Plan for TAN, OU 1-10 Group 1 Sites Remedial Action (INEEL 2000b). Under this plan, waste will be disposed of at (1) a permitted disposal site, (2) a site with disposal authorization from DOE Headquarters (e.g., RWMC), (3) a site operating under Health Department regulations (e.g., CFA landfill), or (4) a disposal site expressly designated to accept CERCLA waste (e.g., ICDF). DOE will demonstrate that: (1) the waste meets the acceptance criteria of the disposal site, (2) the disposal site is properly permitted, designated, or operates under DOE or Health Department regulations, and (3) the disposal site has no violations of its permit (if permitted). The CFA landfill and the RWMC disposal facilities operate under separate legal authorities, and if releases occur at either facility and are not adequately addressed through the operating authorities, these releases may be subject to enforcement under the FFA/CO.

In addition, waste generated during the remedial investigation, otherwise known as investigation derived waste (IDW), will be managed per the letter from Mr. Michael A. Bussell (EPA Region 10 Director for the Office of Waste and Chemicals Management) to Mr. David L. Wessman (TSCA Compliance Manager for the United States Department of Energy Idaho Operations Office) dated January 4, 2000, "The EPA is allowing continued storage of 21 cargo containers of radioactively contaminated IDW containing PCBs. These cargo containers may be stored in the TAN LOFT Building 624, until such time that the waste can be sorted, segregated, and properly disposed."

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish
Post ROD Sampling and Analysis				
100	Prepare Post ROD Sampling & Analysis Plan (SAP)	50	01OCT99*	13DEC99
110	Post ROD SAP Sent to Agencies for Review	20	20DEC99	24JAN00
120	Draft SAP Agency Comment Res. & Incorporation	15	25JAN00	14FEB00
130	Post ROD SAP Becomes Final	1	15FEB00	15FEB00
140	Prepare for Post ROD Sampling Activities	3	16FEB00	18FEB00
150	Perform Sampl. at PM-2A Stock Piles, & WRRTF-13	55	21FEB00	05MAY00
160	Rec. Anal. Data from WRRTF-13 & Perf. RBCA Anal.	40	13MAR00	05MAY00
170	Rec. Anal. Data from PM-2A Stock Piles	40	13MAR00	05MAY00
175	Remove & Bag PM-2A (TSF-26) Stock Piles	16	08MAY00	30MAY00
180	Prepare & Send PM-2A NLCID to IDEQ	51	15MAY00	26JUL00
220	Perform RAD Surveying & Samp. at TSF-06, & PM-2A	38	12JUN00	03AUG00
235	Remove & Bag TSF-06 Overburden	31	03JUL00	15AUG00
190	IDEQ MLCID Concurrence	10	27JUL00	09AUG00
230	Receive Rad Analytical Data from Lab	1	04AUG00	04AUG00
210	Prepare HWDs for Soil at TSF-06 & PM-2A	10	10AUG00	23AUG00
Group 1 RD/RAWP				
240	Prepare Group 1 RD/RA Work Plan	63	07DEC99	10MAR00
250	Draft RD/RA WP DOE-HQ Review & Comm. Inc.	26	13MAR00	17APR00
260	RD/RA WP Table Top Review	1	19APR00	19APR00
270	RD/RAWP Table Top Review Comment Incorporation	10	20APR00	03MAY00
280	Draft RD/RA WP Sent to Agencies for Review	1	04MAY00	04MAY00
290	Draft RD/RA WP Agencies Review	31	05MAY00	19JUN00
300	Draft RD/RA WP Agency Comm. Res. & Incorp.	31	20JUN00	02AUG00
310	Draft Fin. RD/RA WP Sent to Agencies for Concur.	1	03AUG00	03AUG00
320	Draft Final RD/RAWP Agencies Review/Concurrence	11	04AUG00	18AUG00
330	RD/RAWP Finalization	11	21AUG00	05SEP00
340	Group 1 RD/RAWP Becomes Final	1	06SEP00	06SEP00



Start Date 01OCT99
Finish Date 15APR05
Data Date 01OCT99
Run Date 20JUL00 13:56

Early Bar
Progress Bar
Critical Activity

AEJ2 Sheet 1 of 2

Bechtel BWXT Idaho, LLC

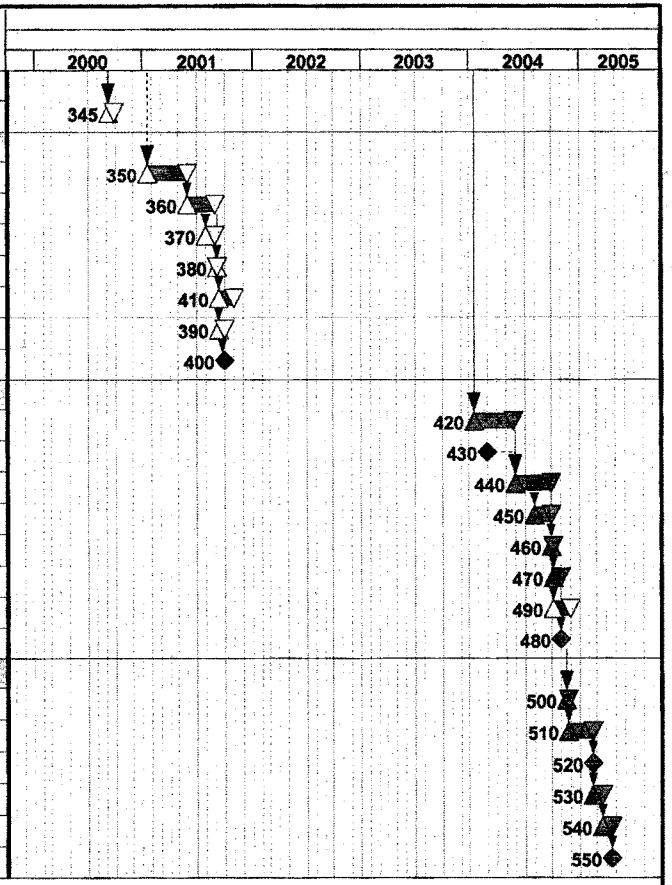
OU1-10 Group 1 Sites RD/RA

Classic Schedule Layout

Date	Revision	Checked	Approved

Figure 5-1. Project schedule.

Activity ID	Activity Description	Orig Dur	Early Start	Early Finish
PM-2A Stockpile & TSF-06 Overburden Disposal				
345	PM-2A/TSF-06 Soil Disposal at RWMC	17	07SEP00	29SEP00
TSF-06 Native Soil Remedial Action				
350	TSF-06 Work Control & Preparations	98	15JAN01*	31MAY01
360	TSF-06 Contaminated Soil Removal & Disposal	65	01JUN01	31AUG01
370	TSF-06 Confirmation Sampling	23	01AUG01	31AUG01
380	TSF-06 Prefinal Inspection	4	04SEP01	07SEP01
410	Site Restoration and Snake Avenue Replacement	38	10SEP01	31OCT01
390	Prepare TSF-06 Prefinal Inspection Report	15	10SEP01	28SEP01
400	TSF-06 Prefinal Insp. Rep. Submitted to Agencies	0		28SEP01
TSF-26 Soil Remedial Action				
420	TSF-26 Work Control & Preparations	97	15JAN04*	28MAY04
430	ICDF Opens	0	27FEB04*	
440	TSF-26 Contaminated Soil Removal & Disposal	86	01JUN04	30SEP04
450	TSF-26 Confirmation Sampling	43	02AUG04	30SEP04
460	TSF-26 Prefinal Inspection	5	01OCT04	07OCT04
470	Prepare TSF-26 Prefinal Inspection Report	16	08OCT04	29OCT04
490	TSF-26 Site Restoration	36	08OCT04	30NOV04
480	TSF-26 Prefinal Insp. Rep. Submitted to Agencies	0		29OCT04
Group 2 Soil Sites (TSF06 &TSF-26) Final Insp.				
500	Group 2 Soil Sites Final Inspection	6	15NOV04	22NOV04
510	Prepare Group 2 Final Inspection Report	52	23NOV04	14FEB05
520	Submit Final Inspection Report to Agencies	0		14FEB05
530	Agency Review Final Inspection Report	21	15FEB05	15MAR05
540	Agency Comm. Res & Inc. to Final Insp. Report	23	16MAR05	15APR05
550	Final Inspection Report Complete	0		15APR05



Start Date 01OCT99
Finish Date 15APR05
Data Date 01OCT99
Run Date 20JUL00 13:56

Early Bar
Progress Bar
Critical Activity

AEJ2 Sheet 2 of 2

Bechtel BWXT Idaho, LLC

OU1-10 Group 1 Sites RD/RA

Classic Schedule Layout

Date	Revision	Checked	Approved

Figure 5-1. (continued).

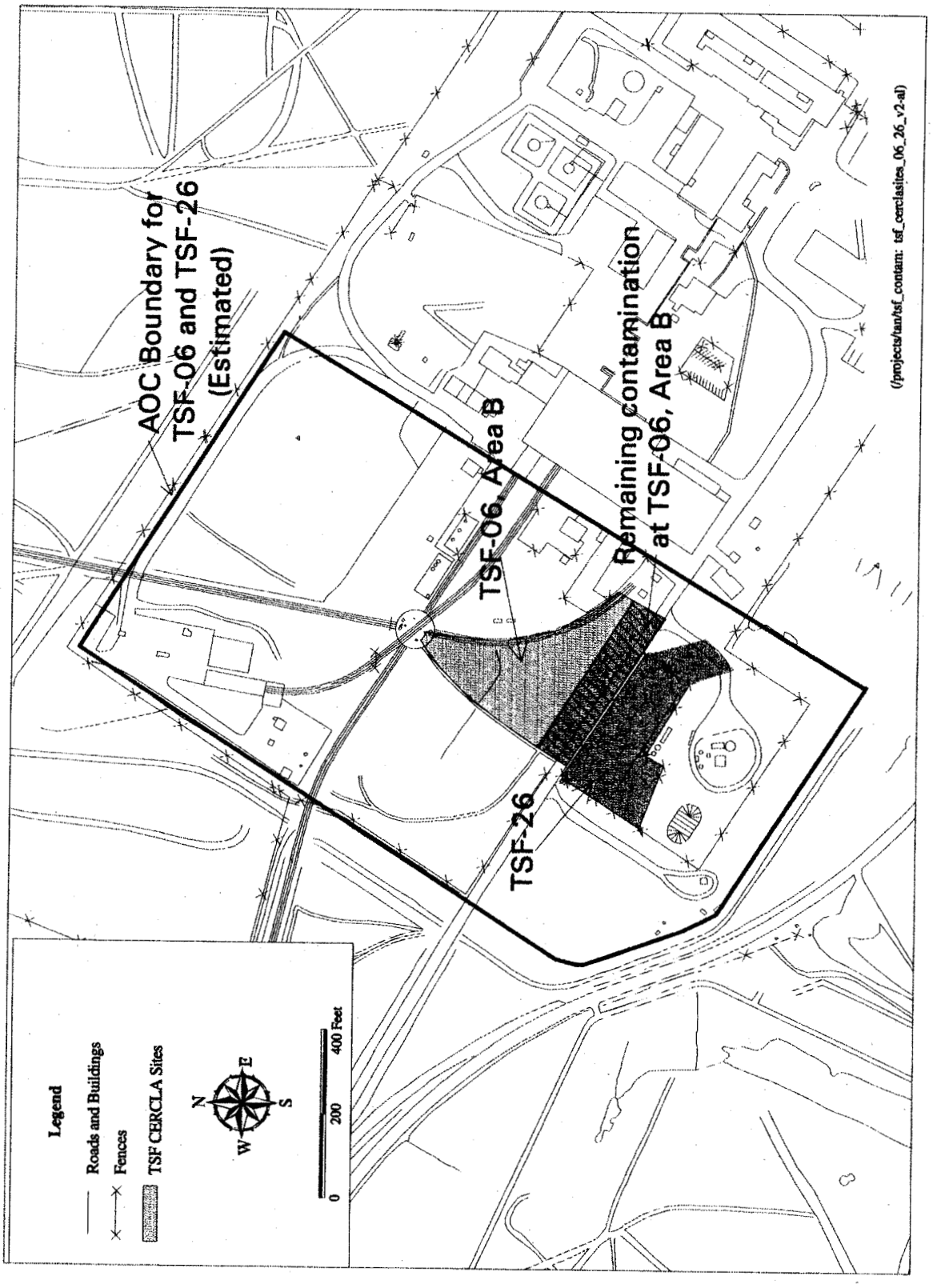


Figure 5-2. Area of Contamination for TSF-06, Area B and TSF-26 Group 1 Remedial Action.

Once the waste has been sorted and segregated the non-PCB waste may be incinerated at WERF and the IDW that contains PCBs and listed waste may be stored in accordance with the V-Tanks ARARs identified in the ROD within the boundaries of the INEEL until final treatment/disposal location is identified.

5.2.10 Earthwork

The earthwork on this project will be defined as:

- Excavation and transportation of radionuclide-contaminated soils from the Soil Contamination Area South of the Turntable and the PM-2A Tanks to the proposed ICDF or another disposal facility either on or off the INEEL
- Excavation, hauling, and placement of backfill material
- Grading and reclamation seeding of the former excavations.

All earthwork will be performed in accordance with Specification 02200, provided in Appendix B, and the project design drawings in Appendix A of this document.

5.2.11 Post-Excavation Sampling

Post-remediation verification sampling will be performed in accordance with the *Field Sampling Plan for Remedial Action Sampling and Field Screening of Selected Sites at Waste Area Group 1, Operable Unit 1-10* (DOE-ID 2003) to ensure all contamination exceeding FRGs has been removed.

5.2.12 Reclamation Seeding

Upon completion of all earthwork activities, reclamation seeding will take place on the backfilled excavations, laydown areas, and on all areas affected by material borrowing, stockpiling, etc. The seeding and mulching will be performed in accordance with the requirements identified in Specification 02930 provided in Appendix B of this document.

5.2.13 Institutional Controls

Field activities conclude with the establishment of institutional controls, as presented in the WAG 1 institutional controls plan (DOE-ID 2000a). Institutional controls for WAG 1 will be included in the facility master plan.

Following remediation, administrative controls will be continued, including lease and property transfer land use restrictions and access restrictions according to the WAG 1 institutional controls plan (DOE-ID 2000a).

5.2.14 Demobilization

After the remedial action activities have been satisfactorily completed, and all equipment properly decontaminated, the subcontractor will demobilize from the site. The office trailer and equipment will be removed from the site. Decontamination pads and temporary fencings erected by the subcontractor will be removed and packaged for disposal, as appropriate.

5.3 Inspections

Upon completion of remedial action construction activities, standard prefinal and final inspections will be performed at each site at the discretion of the Agency project managers or designees. Periodic inspections can occur at any time during remedial activities. The inspections will be conducted to finalize all project work elements. The inspections will establish compliance with (1) the remedial design, (2) the activities outlined in the remedial action work plan, and (3) all requirements indicated.

5.3.1 Prefinal Inspection

The Agency project managers or their designees will conduct the prefinal inspection at the completion of the remedial action construction for the Group 1 sites. A checklist used to document the prefinal inspection will be developed and will be implemented upon approval by the Agencies. Separate prefinal inspections may be scheduled to address the Group 1 sites based on the schedule for performing the remedial action and with concurrence of the Agency project managers. The DOE-ID will notify the Agencies approximately two weeks prior to the prefinal inspection date.

The prefinal inspection will determine the status of construction/remediation activities, including outstanding construction requirements and actions necessary to resolve any issues identified. All of the outstanding construction requirements, along with the actions required to resolve those items, will be identified and approved by the Agencies during the prefinal inspection. The prefinal inspection checklist will be used to document any unresolved or open items and the required actions for resolution or completion. Results of the prefinal inspection will be documented in a prefinal inspection report, which will contain the following elements:

- The names of all inspection participants
- Specific project elements that were inspected
- Completed prefinal inspection checklist documenting the performance of the inspection and all inspection findings
- Corrective actions to be taken to correct deficiencies and open items identified in the inspections, including the required corrective action, acceptance criteria or standards, and planned dates for completion of the actions
- Date of final inspection (if required).

The prefinal inspection report will be issued as a letter report to document the process and results of the prefinal inspection and to indicate that the final remediation goals have been met. If the prefinal inspection does not result in any significant open items that require corrective action, the inspection may be considered a final inspection and the results documented in a final inspection report as described in the following section. The prefinal inspection report will not be revised/finalized. The inspection will be finalized in the Group 1 final inspection report documenting the prefinal and final inspection process. The completed prefinal inspection checklist will be included as an appendix to the prefinal inspection report. Submittal of the prefinal inspection report and the respective targeted schedule are identified in this work plan.

5.3.2 Final Inspection

A final inspection will be scheduled and conducted at the completion of all OU 1-10 Group 1 remedial actions. The need for a final inspection will be determined by the Agency project managers based on the results of the prefinal inspection(s). The final inspection will focus on closure verification of open items from the prefinal inspection(s) and will be used to confirm and document that the final remediation goals have been met.

A final inspection report will be prepared following the completion of the remedial action and prefinal and final inspection process for all Group 1 sites. The report will be submitted to the Agencies for review as a secondary document. The final inspection report will include:

- Identification of the work defined in this Group 1 Sites RD/RAWP and certification that the work was performed and that final remediation goals have been met
- Explanation of any modifications to the Group 1 sites RD/RAWP
- Any modifications made to the remedial design during the Group 1 sites remedial action phase, including the purpose of the performed modifications and results of the modifications
- Problems encountered during the Group 1 sites remedial action and resolutions to these problems
- Any outstanding items from the prefinal inspection checklist that were identified and described; in responding to comments received, the prefinal inspection checklist will not be revised, but rather will be finalized in the context of the final inspection report
- An O&M plan update, if necessary
- As-built drawings showing final contours (as applicable).

The Group 1 final inspection report, finalized through formal Agency review and comment resolution, will be incorporated into the OU 1-10 remedial action report, a primary document which will be submitted after the OU 1-10 Group 2 and 3 remedial action and inspection completion. In accordance with FFA/CO Section 12.2, the draft OU 1-10 remedial action report will be submitted within 60 days after the final inspection for the OU 1-10 Group 2 and 3 sites. Requirements for the OU 1-10 remedial action report will be addressed in the OU 1-10 Group 2 and 3 RD/RAWP.

5.4 Supporting Documents

The following sections provide a brief description of documents or procedures associated with activities to be conducted at the OU 1-10 remedial sites being addressed in this work plan.

5.4.1 Operation and Maintenance Plan

The O&M plan (DOE-ID 2001b) covers requirements for ongoing maintenance and inspection and environmental monitoring for OU 1-10 sites following the completion of remedial action. The plan also references and interfaces with the activities covered in the WAG 1 institutional control plan (DOE-ID 2000a) and further addresses requirements for five-year reviews. The O&M plan is a living document, revised as necessary to incorporate changes and additions identified during the implementation of the plan.

5.4.2 Institutional Controls Plan

The WAG 1 institutional control plan (DOE-ID 2000a) provides institutional control requirements for all WAG 1 sites requiring institutional controls. The plan also contains inspection items for the annual inspections. The plan is a living document, revised as necessary to incorporate changes and additions identified during the implementation and subsequent five-year reviews.

5.4.3 Decontamination Plan

Equipment decontamination will be conducted at the Soil Contamination Area South of the Turntable and the PM-2A Tanks, where radionuclide contaminated soils will be excavated. Prior to completing the removal of contaminated soil, all tools and equipment that have been in contact with contaminated soils will be decontaminated.

Specific decontamination procedures will be performed for radiological contaminants on equipment used during remedial activities. The Soil Contamination Area South of the Turntable and PM-2A Tanks may require decontamination for radiological and F001-listed contaminants.

Decontamination operations will be performed in accordance with Environmental Restoration Technical Procedure -52 (formerly Standard Operating Procedure-11.5), "Field Decontamination of Sampling Equipment," (INEEL 1999) with the following exception:

- Isopropyl alcohol (isopropanol) will not be used during decontamination to avoid generation of a hazardous waste.

Dry decontamination procedures will be used at the beginning of the decontamination effort. If additional wet decontamination is necessary, the equipment will be driven or placed onto a clean decontamination pad and/or plastic, such as rubber matting, for this activity. If this is not successful, equipment may be decontaminated by using a high-pressure water spray from a portable unit. All equipment will be surveyed and visually inspected to ensure all source contamination has been removed. If additional contamination is still evident, additional decontamination efforts will be conducted until the equipment is free releasable and clean. The equipment will remain in the areas where remediation is occurring until it is adequately decontaminated, as verified by field radiation surveys performed by the radiological control technician.

The following equipment is required for decontamination:

- Decontamination pads or plastic large enough for any equipment used in the contaminated areas

- Brooms, wire brushes, putty knives, and other small equipment for removing radionuclide-contamination through dry methods

- Portable low-volume, high-pressure water spray units (this equipment would only be used if dry decontamination was ineffective).

Management of wastes generated during decontamination efforts will remain within the area of contamination (AOC) for temporary storage until final waste disposition. Tools used for equipment decontamination (e.g., brushes) will be decontaminated, surveyed for radiological contamination, and released for reuse.

5.4.4 Waste Management Plan

The OU 1-10 waste management plan (INEEL 2000b) describes waste management activities for the OU 1-10 Group 1 sites. The plan identifies the waste streams that will be generated during the remedial actions and details the plans for waste management, minimization, and disposition.

The following waste streams are expected to be generated as a result of the remedial action activities:

- Personal protective equipment
- Decontamination water
- Fence posts, stakes, and wire
- Soil and weeds
- Noncontaminated project waste.

Ultimate disposition of these waste streams will depend on whether they are contaminated with low-level radiological contaminants, petroleum contaminants, or a mixture of any of the above. Note that a more detailed list is provided in the waste management plan.

5.4.5 Remedial Action Field Sampling Plan

The remedial action field sampling plan (DOE-ID 2003) has been prepared for the specific tasks of conducting confirmation sampling at TSF-26 and TSF-06. This document is a living document and may be updated as conditions dictate. This plan covers the following items:

- Task-site responsibility
- Personnel training
- Sampling objectives
- Sampling locations and frequency
- Sampling procedures
- Sampling equipment.

5.4.6 Health and Safety Plan

A site-specific OU 1-10 HASP is being prepared specifically for the tasks and conditions to be encountered on this project. The document is a living document and may be updated as conditions dictate. This plan covers the following items:

- Task-site responsibility
- Personnel training

- Occupational medical program and medical surveillance
- Safe work practices
- Site control and security
- Hazard evaluation
- Personal protective equipment
- Decontamination and radiation control
- Emergency response plan for the task sites.

5.4.7 Spill Prevention/Response Program

Any inadvertent spill or release of potentially hazardous materials will be subject to the substantive requirements contained in the *Emergency Plan/RCRA Contingency Plan* (PLN-114) for the TAN area. Handling of the materials and/or substance will be in accordance with the recommendations of the applicable material safety data sheets, which will be located onsite. In the event of a spill, the emergency response plan (see Section 11 of the project HASP) will be activated. All materials/substances on the work site will be stored in accordance with the applicable regulations and will be stored in approved containers.

6. FIVE-YEAR REVIEW

In accordance with the National Contingency Plan for sites where contamination is left in place above health-based levels, a review will be conducted within five years from the initiation of construction activities at OU 1-10 to ensure that the remedy is still effective in protecting human health and the environment. Subsequent five-year reviews will be completed within five years of the previous review. This will also be used to assess the need for future long-term environmental monitoring and administrative/institutional controls.

All sites with contamination remaining above unrestricted land use concentrations will require an evaluation during the first five-year review. For "No Further Action" sites identified in the ROD, land use assumptions and restrictions will be reviewed as part of the five-year review. The possibility exists that contaminated environmental media not identified by the INEEL FFA/CO or in this comprehensive investigation will be discovered in the future as a result of routine operations, maintenance activities, D&D, and review of previous D&D activities at TAN. These will be addressed using the process for new site inclusion defined in the FFA/CO and will be remediated pursuant to the RAOs and the FRGs identified in the ROD. Five-year reviews will also ensure that any changes in the physical configuration of any TAN facility or site where there is suspicion of a release of hazardous or radioactive substances (such as D&D) will be managed to achieve remediation goals established in the ROD.

The Agencies agreed that "No Action" would be taken at the 76 additional sites described in the ROD. These "No Action" sites will not require five-year reviews and are available for unrestricted land use.

The WAG 1 institutional control plan (DOE-ID 2000a) and OU 1-10 O&M plan (DOE-ID 2001b) identify the inspections during the first five years after the remedial action. Inspection details and inspection checklists are provided in these plans. After the first five-year review, the Agencies may revise the inspection frequency. Further requirements for five-year reviews will be developed and addressed in a future revision to the OU 1-10 O&M plan (DOE-ID 2001b).

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